

COMMERCIAL CAR JOURNAL

THE MAGAZINE FOR FLEET OPERATORS

JANUARY 1943

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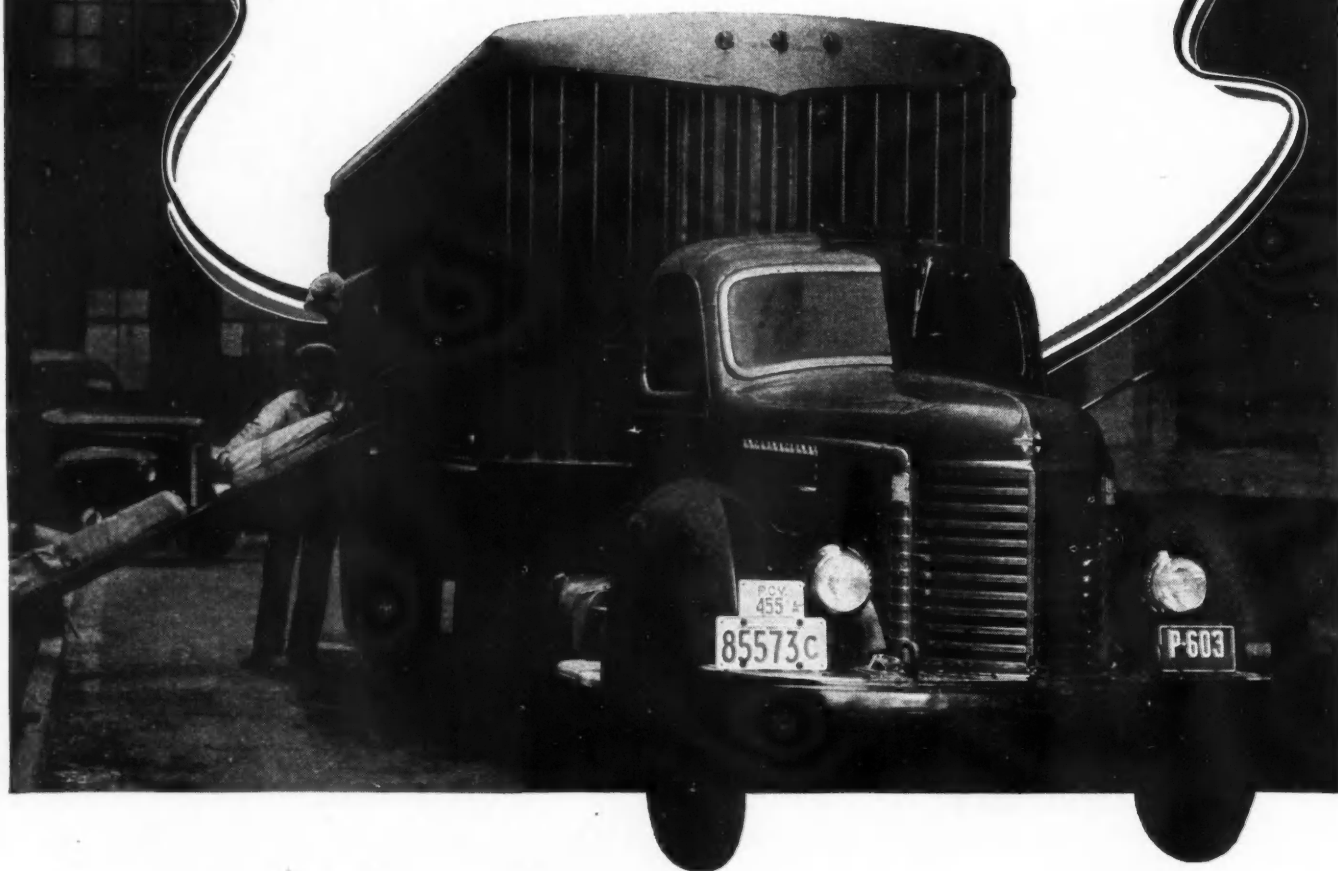
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INTERNATIONAL TRUCKS

Bureaucratic Blitzkrieg

In December of 1941 the nation had its Pearl Harbor. In December of 1942 the ODT and OPA had a "Pearl Harbor" all their own. Voters, led by the farmers, signalled their dissatisfaction to Congress, and congressmen swarmed to the attack. They blasted away while holiday bells chimed their ironic "good will" messages and when the smoke cleared, OPA's Leon Henderson was a cooked goose and ODT's Joseph B. Eastman was reported to be a "very disappointed man."

ODT caught hell for its Certificate of War Necessity Order No. 21 and the 32-page booklet of fine-print instructions that few operators seemed to be able to follow; for the drastic "tailoring" of Certificates whereby many operators were allotted so little mileage and gas rations that a breakdown of transportation threatened; for the record keeping that was prescribed, and for presuming to place restrictions on farmers.

OPA took a pasting because of its manhour-eating forms and reports, its fantastic instructions, the unpopularity of rationing and price control in general and the unpopularity of Mr. Henderson in particular.

Leon resigned, using "ill health" as his excuse. Joe remained, unbloody but bowed.

Altogether it was a very unhappy ending to a very hectic year. The New Year held out no promise of being a happier one. There were signs that incoming Congressmen were being supplied with ammunition by dissatisfied constituents and that the blitz would be resumed.

When the awful weight of Congressional criticism fell on ODT the scurrying for cover, the back-tracking and the reassuring that ensued were most undignified. Work that had been done by thousands of ODT employees was undone and remained to be done all over again. Farmers



WASHINGTON RUNAROUND

Bureaucratic "Pearl Harbor" . . . Turney's Turkey or What's Happening to ODT 21 . . . Used Truck Price Ceiling Proposal as It Goes to the Bulge-Brows . . . Miscellany

by GEORGE T. HOOK, Editor

were told to go to their County Agents and Farm Boards and get all the gasoline they needed. All other operators dissatisfied with the way their Certificates were "tailored" were told to go to their Local Boards and get gasoline rations on their own figures. This "holiday" from rigid control was slated to last through Jan. 31. Thereafter, it was intimated,

would come the day of reckoning. But fearful of Congress, cowering before the wrath of farmers, and shivering under the frigid, uncooperative attitude of the so-called little-business man, it remained to be seen how severe or how compromising would be ODT's new-year, new-21-deal attitude.

(TURN TO NEXT PAGE, PLEASE)



WASHINGTON RUNAROUND

(Continued from Page 27)

Turney's Turkey

Going into the new year the confusion of war necessity order was a certificated mess. It was well on the way to earning the loving title of "Turney's Turkey." (Credited generally with being its parent is John R. Turney, former railroad attorney, more recently counsel for motor carriers, an extremely able legal mind and reputed to have the ear of Director Eastman as no other man has.) The difficulties were due entirely to the widespread spirit of passive resistance which was spontaneously generated by the very nature of the order. This resistance to what is avowedly a "club to make conservation effective" showed up in the disturbing fact that almost 80 per cent of the 2,700,000 applications received were improperly or inadequately filled out. It also showed up in the alarming fact that approximately 20 per cent of operators—some 600,000 of the national total—didn't even trouble to apply for a certificate. Most of the 600,000 haven't been heard from; some of them had decided that, in spite of Joe Eastman's

frequent statement to the contrary, the ODT was intent on putting them out of business, and so they filed notice that they were quitting before they were fired.

ODT's Dilemma

These facts were known to ODT when Congress began to lay down the barrage. This barrage showed the dissatisfaction of the constituency back home and, combined with the known facts, convinced ODT that a policy of appeasement was needed. There was no doubt that if ODT held to the letter of its order there would either be wholesale violations after the Nov. 15 deadline or a disruption of highway transportation that would be a national calamity for which a few men would be held personally responsible. So, ODT kept the club in its hand but didn't use it; the effective date of Nov. 15 was retained, the way was opened to reconsideration of certificates and, with the collaboration of OPA, operators were permitted to get all the gasoline they needed to operate up to Jan. 31 when, it was hoped, all objectionable certificates would have been reconsidered.

History Will Repeat

To facilitate this reconsideration of certificates by making personal calls more convenient ODT decided to add 358 offices to its 142 district offices, making a total of 500. These were to be located in trading centers in

the Chambers of Commerce offices. As late as Dec. 22 these locations had not been fully determined. Not even a partial list was available for publication. Some hope was expressed that the list might be completed by the end of the week, that is, Dec. 26. If the list were announced Dec. 28 it would be several days before the news penetrated to the remotest corners of the land. The ODT would be left with about 28 working days—and not every office would be open every day—in which to reconsider (in most cases man to man) a couple of million certificates, making sure that all questions were answered and that both parties understood each other.

It doesn't seem to be in the wood for ODT to complete the job by Jan. 31. The experience with applications for certificates is certain to be repeated. Most of the operators seeking adjustments will delay the reconsideration process until the last minute, ODT will not be able to cope with the last-minute rush and again will have to decide whether to postpone using the club or to use it and force cooperation.

An Unwanted Club?

Evidence is mounting that whereas Turney sold ODT a club, ODT hesitates to use it. Indeed it might even be said that ODT does not want to use it. The club, in effect, has become a monumental embarrassment. The back-tracking now in progress

CCJ QUIZ

by ROBERT F. BAHL

(Correct answers on page 54)

Uncle Sam wants your trucks on the road—not up on blocks. That's why he's issued so many orders and regulations to "keep 'em rolling" here and on the battlefronts, too. Are you familiar with what is being done to achieve this? Check your knowledge with these Quiz Questions. Keep score. Take a credit of 10 points for each question you answer correctly. Answers are on page 54.

1

To make sure that you don't run your tires beyond the point where they can still be recapped, Uncle Sam insists that you have your tires inspected—

- a. each time you purchase gasoline.
- b. once a month.
- c. every 30 days or 2500 miles.
- d. every 60 days or 5000 miles.

2

The news of Pearl Harbor was also the news that we'd have to make our trucks last well beyond their normal life expectancy. Can you tell us how many of our trucks were more than seven years old when we entered the war?

- a. 12 per cent.
- b. 22 per cent.
- c. 33 1/3 per cent.
- d. 50 per cent.

3

Which of these would be used by a jobber or distributor in applying for a priority for automotive supplies?

- a. L-63.
- b. PD-IX.
- c. P-100.
- d. M-158.

4

To alleviate the gas and oil situation on the East Coast, the government has—

- a. put 14 tankers back into the Gulf-East Coast service.
- b. allocated steel for the largest pipe line in the world.
- c. given a priority of AA-1 for the building of 700 tank cars.

5

The now famous Baruch report on the rubber situation recommended—

is one bit of evidence to support this presumption. Another is in the instructions that have gone out to the ODT staff that will handle the appeals. The staff is instructed that "in general, considerable discretion must be exercised in passing on appeals," although "it is not desired that personnel depart too greatly from the basic principles originally observed in issuing completed applications." Furthermore, "if the examiner determines that the applicant cannot (without hampering the war effort or without restricting transportation essential to civilian economy) adjust his operation before the end of the first quarterly period, the examiner will certify allotments sufficient to permit continuance of such operations until April 1, 1943, in the supplemental certificate." It is considered "reasonable to expect applicants to get down to business and to eliminate all unnecessary waste by April 1, 1943."

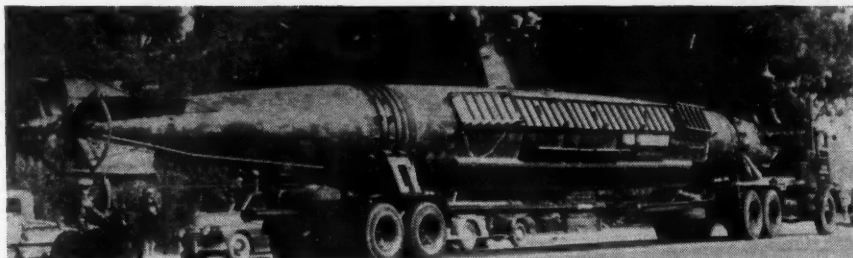
Is this April 1, 1943, date anything more than another withholding of the club? Has anyone defined "transportation essential to civilian economy" so that ODT personnel will know what is meant and can tell what type of operation it does and does not include? How uniform and equitable will be a regulation that is administered with "considerable discretion?" Does this exercise of discretion and lack of definition mean that ODT now sees the club as some sort of magic wand?

- a. that trucks and cars must make their present tires last and all available natural and synthetic rubber be reserved for military use.
- b. that enough thiokol, reclaimed and crude rubber be allocated immediately to cover essential civilian requirements.
- c. that all commercial vehicles be taken care of before any tires or retreads are made available for passenger cars.

6

The government wants to keep passenger cars on the road as well as trucks. Do you know the ratio of trucks to passenger cars?

- a. 1 to 6.
- b. 1 to 10.
- c. 1 to 20.
- d. 1 to 50.



One of the midget two man Jap submarines which made a sneak attack on Pearl Harbor, and was sunk there, is on the move again—but this time it is being hauled on specially engineered Trailmobile Trailers by the Bigge Drayage Co. of Oklahoma, Cal., who have contracted with the U. S. Treasury Department

to haul the submarine to some 500 cities in all parts of the United States. This submarine, raised by the Navy for inspection, is being displayed in connection with the war stamp and bond selling drive of the Treasury Department. According to present plans, it will take six months or more to complete its itinerary

A Grim Picture

There is additional evidence of withholding in the concluding paragraph of the instructions, a paragraph which, by the way, operators should take to heart: "The national picture is too grim for us to dodge our responsibility to bring the facts home to the operators. In doing so, examiners and others should be courteous and helpful and should seek to make applicants realize the situation and the fact that their failure to conserve will surely result—too soon—in their being without tires and vehicles with which to carry on their 'necessary' activities. For their sakes and for the country's sake, we must make them understand. We must gain their cooperation."

Compulsion vs. Cooperation

It will seem ironical to many operators that the ODT now speaks of "gaining cooperation" when the principal reason that has been given to excuse the 21 club is that it was made necessary by the failure of voluntary cooperation on which the effectiveness of Conservation Orders

3, 6 and 17 depended. Some operators contend that Order 21 killed cooperation because it substituted compulsion. They maintain that the Conservation Orders, while not wholly effective—as what sort of order could be wholly effective?—did inspire and were inspiring a good deal of voluntary cooperation and that vehicles and tires were being conserved. They believe that the cumulative effect of voluntary cooperation would have been such as to meet all reasonable objectives. They think that when ODT abandoned voluntary cooperation and resorted to a club to get "perfection" it lost sight of the fundamental truth that, as Sam. Johnson, LL.D., put it, in the case of public regulations "good can never be complete; it can only be predominant."

Some good came of the Conservation Orders. That has been admitted officially. So far, certainly, no good has come of ODT 21. Everything has been bad. And particularly bad has been the effect on conservation measures which were previously voluntarily effected. What must have been

(TURN TO PAGE 130, PLEASE)

7

As persons "performing a most important function in the nation's war effort," the Selective Service Board has classified one of these groups as essential workers. Can you pick it out?

- a. Tire recappers and retreaders.
- b. Oil tank truck drivers.
- c. Tractor-trailer drivers.
- d. Automobile mechanics.

8

To keep 'em rolling "smoothly," a joint labor-management committee of the trucking industry has been formed in Washington. Management was represented by the American Trucking Associations and labor by—

- a. the Congress of Industrial Organizations.

- b. the International Brotherhood of Teamsters.
- c. the ODT division of transport personnel.

9

Under gasoline rationing, what is the designation for the coupon book assigned to truck operators?

- a. B-book.
- b. C-book.
- c. T-book.
- d. X-book.

10

To keep 'em rolling in Tunisia, Guadalcanal, and points sundry over the globe, the automotive industry has broken all records. Accumulated orders for war goods held by the former automotive plants total in dollars—

- a. 100 million.
- b. 500 million.
- c. 1 billion.
- d. 15 billion.



British female mechanics replacing engine they have overhauled into truck chassis. There are ten women to one man in this shop

UNREASONED statements here, both in the newspaper press and by official and unofficial spokesmen, convey the impression that the British transport industry requires prodding to increase its percentage of female labor. But actually the reverse is the fact. While the management of transport undertakings collectively agree that women are unfitted for, and themselves unwilling to undertake, long distance runs with heavy vehicles, not a single manager has expressed the least dissatisfaction with women as drivers of light vehicles on short runs or as mechanics and mechanics' helpers in the repair shops. Indeed, the real position is that operators cannot secure a sufficiency of these women workers; for a woman skilled with her hands, or adaptable, can usually command much higher pay in the machine rooms or on the assembly lines of a manufacturing plant. Were it not for the fact that such jobs generally entail living away

FEMALE LABOR



This report on the female labor situation in British fleet operations discloses that fleet operators collectively agree that women are unfitted for, and themselves unwilling to undertake, long distance runs with heavy vehicles. However, not a single operator has expressed the least dissatisfaction with women as drivers of light vehicles on short runs or as mechanics and mechanics' helpers. Strenuous war-time driving conditions over unmarked and blacked-out roads and the lack of eating and lodging accommodations are

from home in a strange locality, where the influx of war workers creates difficulty in billeting accommodation, it is extremely doubtful whether the transport industry would be able to attract as many women as it does.

Management is definitely desirous of employing females as both mechanics and mechanics' helpers, and also as drivers of light trucks and local delivery vans; but both the managers and the women themselves are prejudiced against women driv-



A study of women workers in the British transport industry reveals prevailing methods of hiring, training and payment of mechanics and drivers and how they compare with men

by W. KINGSTON FUDGE
Commercial Car Journal London Correspondent

IN GREAT BRITAIN

given as the reasons why women drivers are not in evidence in the over-the-road operations.

Employment of female mechanics and helpers is continuously increasing. In many shops women outnumber men; one shop is known to have 160 women mechanics to 8 male mechanics. In the early stages of their training women are slower than male apprentices, but readily develop in skill and strength until they compare favorably with seasoned male repairmen. The report indicates, further, that women most suit-

ed for this work are those of good physique who have worked in factory or in out-door jobs. Office workers, as a rule, are not successfully adaptable.

Payment is based upon a legal wage scale, the minimum for apprentices being 80 per cent of the full rate for the first 13 weeks and 90 per cent for the next 26 weeks. The numerous other points covered in this article should be of interest to fleet operators on this side of the Atlantic in meeting the manpower shortage.

ing heavy types of vehicles, especially on long distance runs. From the women's point of view, this is understandable enough even where a woman has no home ties; for apart from the physical aspect of manipulating a heavy truck, and the

strain of driving in the black-out on little frequented country roads, it is oftentimes impossible in some localities to secure a bed for the night, or to find any suitable cafe for a hot meal.

Under existing conditions, men

drivers think nothing of sleeping in the truck itself when in a district where accommodation for the night is not available, and can makeshift with a pint of beer and bread-and-cheese in the nearest tavern, if no better fare is procurable. (Indeed, so difficult had it become for long-distance drivers to obtain meals that only in November has been issued a directory of road transport cafes throughout the country, specially compiled by the Road Transport Catering and Accommodation Joint Committee; and copies are to be supplied to lorry drivers and others engaged on war-time transport. This directory has been officially compiled and issued because of the large number of complaints by drivers that they had the greatest difficulty in finding meals and lodgings at a reasonable price during long journeys. (It is interesting to note that most of the cafes, etc., included in the directory are ones that transport workers themselves have recommended.)

Also, the men drivers have years of knowledge and experience of the routes, which is of inestimable value in a land where all sign-posts and other aids to direction have been removed as a precaution against the landing of invaders. The men can still travel, somehow, even in the blackout (which in Great Britain is at some seasons as early as 4 o'clock in the afternoon); but no women before the war were employed at all on long-distance runs, so that any such now must necessarily be inexperienced. To tell such a woman to take a truck from, let us say, London to Liverpool would be a futile loss of time for all concerned: she could only proceed there by continually stopping and asking the way. Owing to the removal of all signs indicating the name of a town or village, it is extremely difficult to follow the map from town to town: on arrival at any inhabited place, it would be necessary to stop and ask its name. For these reasons of route direction difficulties alone, the employment of women as long-distance drivers is obviously impractical. Not only do no women offer themselves for this work, but if they did, it would need to be an exceptionally optimistic manager to engage them for such work.

It is only in the Services that female heavy vehicle drivers are to
(TURN TO PAGE 82, PLEASE)

NEARLY 20 years ago, keen competition crowded upon us a realistic acceptance of the fact that a dollar saved on delivery costs is a bigger dollar than that turned in by the sales department, because the former is a net dollar while the latter is not.

In order to achieve the fleet operating economy we were after, we began the systematic saving of gasoline, tires and replacement parts. Now, that these items are on the critical list, our experience in conserving them very well can mean the difference between the continuance of necessary deliveries and of going out of business.

One of the largest and oldest distributors of dairy products in South Florida, the Florida Dairies Company of Miami also is a producer. The firm operates two large dairy farms, one of which it owns and the other it leases. The company engages in both the wholesale and the retail branches of the business, delivering to hotels, restaurants, stores and to private residences.

Although distribution is concentrated within a 15-mile radius, the routes worked cover the congested traffic areas and sparsely settled sections of the cities and towns, collectively known as Greater Miami.

To serve its customers efficiently, Florida Dairies operates a truck fleet of 30 units. These include 13 vehicles of 1½-ton capacity, nine of 1-ton size, and eight others of varying capacities from ½ to 1¼ tons. For at least two-thirds of these units the firm has constructed bodies of original design in its own shop. On several chassis purchased in recent years for retail delivery routes, bodies were obtained from the chassis manufacturer. For the business use of its executives and route foremen the company also operates six passenger cars. In 1941, our latest year of normal operation, the entire fleet traveled a total of approximately one-half million miles.

The firm houses its fleet maintenance department in a 50 by 112 ft. garage building of concrete block construction, across the street from from its Miami offices and plant. Large doorways at either end of the structure, skylights and an abundance of sidewall windows supply an ample amount of natural

light from five directions for the use of washrack, work benches and fixed equipment. A 9 by 16 ft. space in one rear corner has been partitioned off to form a combination office and stockroom.

In these quarters we do at least 90 per cent of our chassis maintenance work and all of our body reconditioning and building. We send out only such items as cylinder reboring, wheel and axle work, major radiator and tire repairs, brake drum turning and an occasional job of armature rewinding.

To expand the scope of our maintenance some of us in the shop have

taken "refresher" courses in motor tune-up, welding and automotive electricity. We do all of our starter-generator work with the exception of the armature winding mentioned. We recharge our own batteries but, so far, have made no attempt to rebuild them.

Besides myself, our maintenance personnel consists of three men. One of these is a competent, all-around mechanic, while the other two are not.

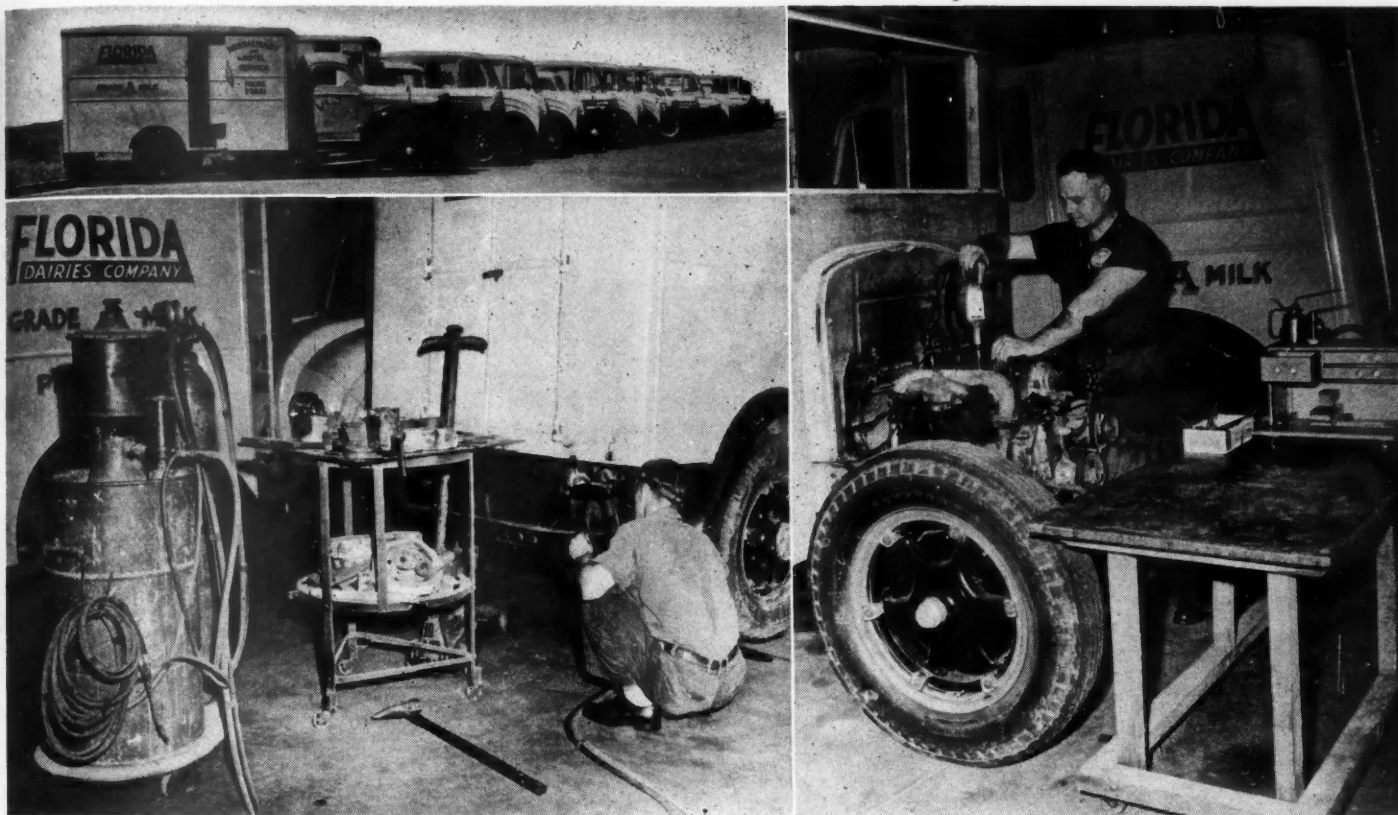
In previous years to carry on our program we had three mechanics, including myself. The fourth man did, and still does, the washing and



R. K. Dawson, Florida Dairies' Fleet Superintendent, relines brake shoe. There is no scarcity of efficient tools in this shop, as is quite obvious

DAIRY'S DAILY

Day-by-day plan of tire and mechanical



Top: Part of Florida Dairies' fleet. Bottom: Mechanic welding rear bumper bracket. Mobile welding equipment may be moved to any part of the shop

Departmentized lay-out and portability of equipment is the key-note of this shop. Workbench above, mounted on casters, is moved where needed.

INSPECTIONS DROP COSTS

check-ups leaves no chance for trouble to creep in . . .

by R. K. DAWSON

Fleet Supt., Florida Dairies Co., Miami

minor maintenance jobs. Recently, to replace one of our mechanics, who left to go into work related to the war effort, we hired a former filling station employee.

Working from 11 p. m. until 8 a. m., the latter does the greasing and services our units for gasoline, oil, air and water, besides attending to minor mechanical work. The rest of our maintenance personnel are on duty from 8 a. m. to 5 p. m. From that time, until the night man comes on, the garage remains closed.

Road service is one of our less pressing problems. Including tire (TURN TO PAGE 70. PLEASE)



While the impetus for this dairy fleet operator's maintenance program may be traced to the sales and bookkeeping departments nearly 20 years ago, its practical effect was to establish an efficient fleet maintenance program good enough to keep the fleet rolling for the duration.

Some of the conservation accomplishments for 1942 alone, definitely traceable to the basic program, are:

1. 39.8 per cent fuel saving over 1941. While much of this saving is traceable to the national mileage curtailment plan, a great deal of it is the direct result of the Florida Dairies' shop maintenance procedures. Mr. Dawson, the fleet superintendent, cites the performance of a 10-yr. old truck as an example. This vehicle consumed an average of 7 m.p.g. when new. Today, its gasoline consumption averages 7.28 m.p.g.

2. Oil consumption average for 1942 is 276 m.p.q., compared with a 208.4 m.p.q. average for 1941. This gain of 66.7 m.p.q. is approximately what the average m.p.q. was per truck not very many years ago.

3. A new tire, plus three cappings, runs about 40,000 miles; experience with recaps dates back about 15 years.

The methods used to achieve these and other savings are outlined in the article.

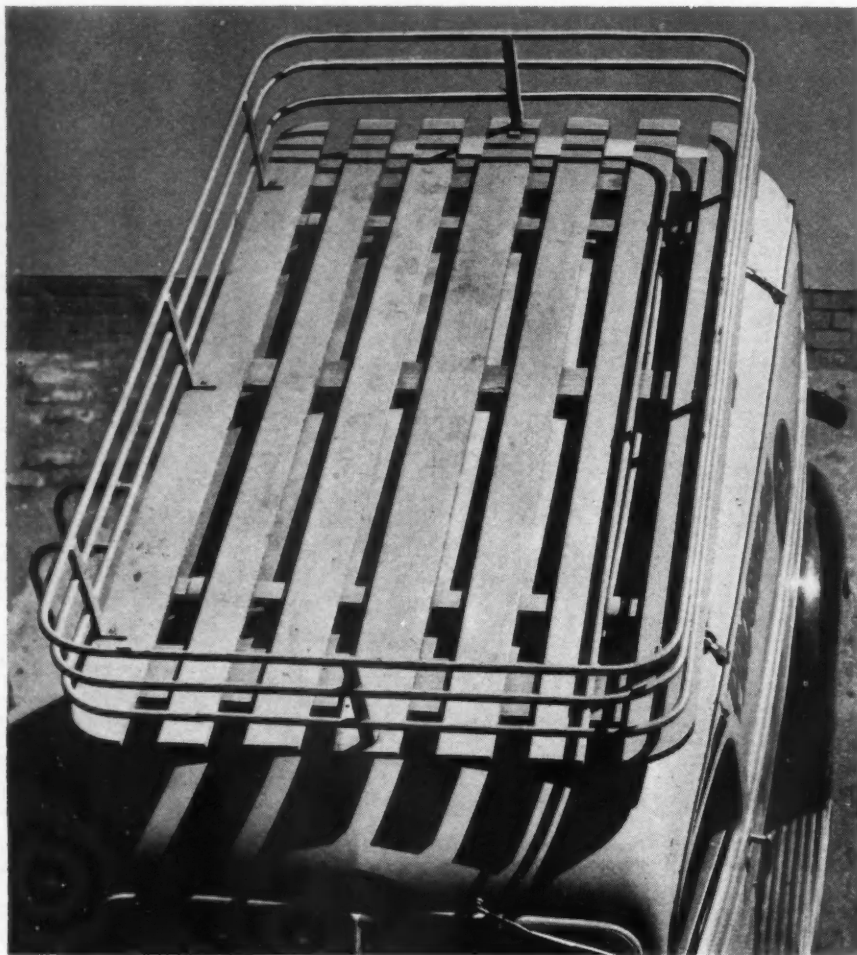


Fig. 1. Left, close-up of rack showing construction. Above, rack holds 600 lb.

HOME-MADE RACK BOOSTS PAYLOAD

Laundry fleet operator solves increased capacity problem with bundle racks carrying 600-lb. payload and costing only \$32

by GEORGE W. RUSSELL

Superintendent of Traffic, Progress Laundry Co., Indianapolis, Ind.

WHEN Uncle Sam asked the laundry industry to cut out all special deliveries and curtail mileage generally by 40 per cent, the capacity of our fleet of 42 small panel body trucks was strained to the utmost to afford even a semblance of satisfactory delivery service to our customers. It was nearly impossible to carry the extra weight and bulk loads which fewer deliveries involved.

Then we conceived the idea of increasing the unit carrying capacity of our small trucks by making and installing steel-wood racks placed on the tops as shown in Fig. 1. Obviously, it is not a complicated mechanism. It is not difficult to make, once the design is worked out and a working sample made. Also, it is an inexpensive method of increasing a truck's payload.

A local machine shop made the first rack from our design and specifications at a cost of \$96. Considering what the rack does for us, it is worth the price we paid. However, we needed 28 additional racks for our suburban deliveries and, at that rate, the cost would be considerable. Therefore, we decided to build them in our own maintenance shop.

After we got our bending tools made, with which to form the round corners of the steel pipe, we were able to turn out three racks a day. The time and cost of the first rack we made naturally was high, but the other 27 only cost us \$32 each. Any shop can make similar racks from the following data and the accompanying illustrations. Of course, the various dimensions will have to be adjusted to individual requirements and the types of vehicles.

The complete device consists of the rack itself, the base upon which it is fastened and a ladder for accessibility. The rack is 8 ft. long, 14 in. high and takes up practically the full width of the truck's top. Seven $\frac{3}{4}$ x 4 in. boards, spaced about 2 (TURN TO PAGE 96, PLEASE)



A STUDY of reasons for excessive cylinder wear should lead to methods of operation and care by which more mileage will be obtained from an engine before a major overhaul is necessary. Fleet operators should be especially interested in this subject; not only because of the importance of keeping maintenance costs as low as possible under wartime operations, but also to conserve replacement parts.

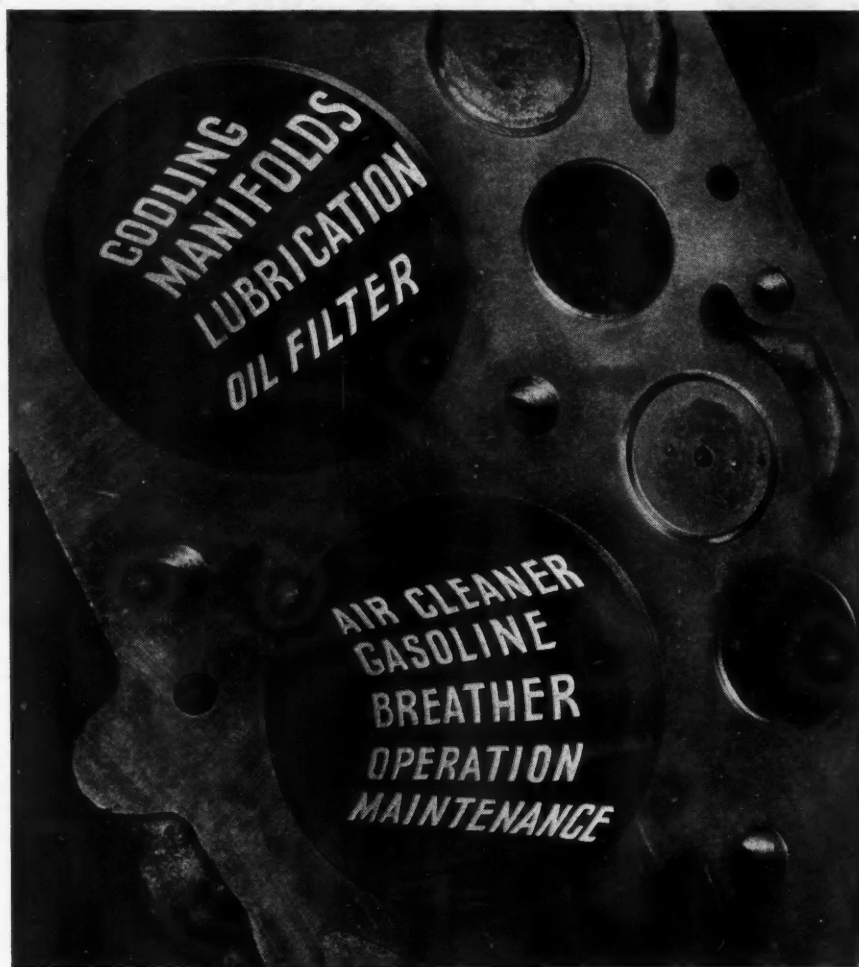
Cylinder wear is often affected by cooling, manifolding, carburetion, cylinder finish, cylinder block material, alignment of component engine parts and inefficient lubrication. On the other hand, improper care and operation of an engine also leads to trouble. There are a few rules of operation, care and maintenance which can be followed to give more miles before an overhaul is necessary.

Cooling

An ideal cooling system would maintain the cylinders at a uniform temperature under all conditions. The cylinders would be maintained at the same temperature in hot or cold weather, whether heavily or lightly loaded. Naturally, it is very difficult to design a cooling system to meet all these conditions and compromises must be made. Many engine cooling systems are equipped with thermostats that aid materially in approaching this condition. Radiator shutters also help.

After an engine has been used for a long time, the cooling system is likely to become clogged with rust and sludge. Small passages may become completely closed. The cooling system in general becomes less efficient and it may develop hot spots. With lack of proper cooling, the engine may run constantly in an overheated condition and excessive friction may cause abnormal cylinder wear. If hot spots develop, as indicated by the boiling sound after the engine is stopped even though the

(TURN TO PAGE 100, PLEASE)



9 FACTORS IN CYLINDER WEAR

Suggestions for eliminating excessive cylinder wear that will increase engine life and conserve gas, oil and vital materials

by JOHN B. YERGER

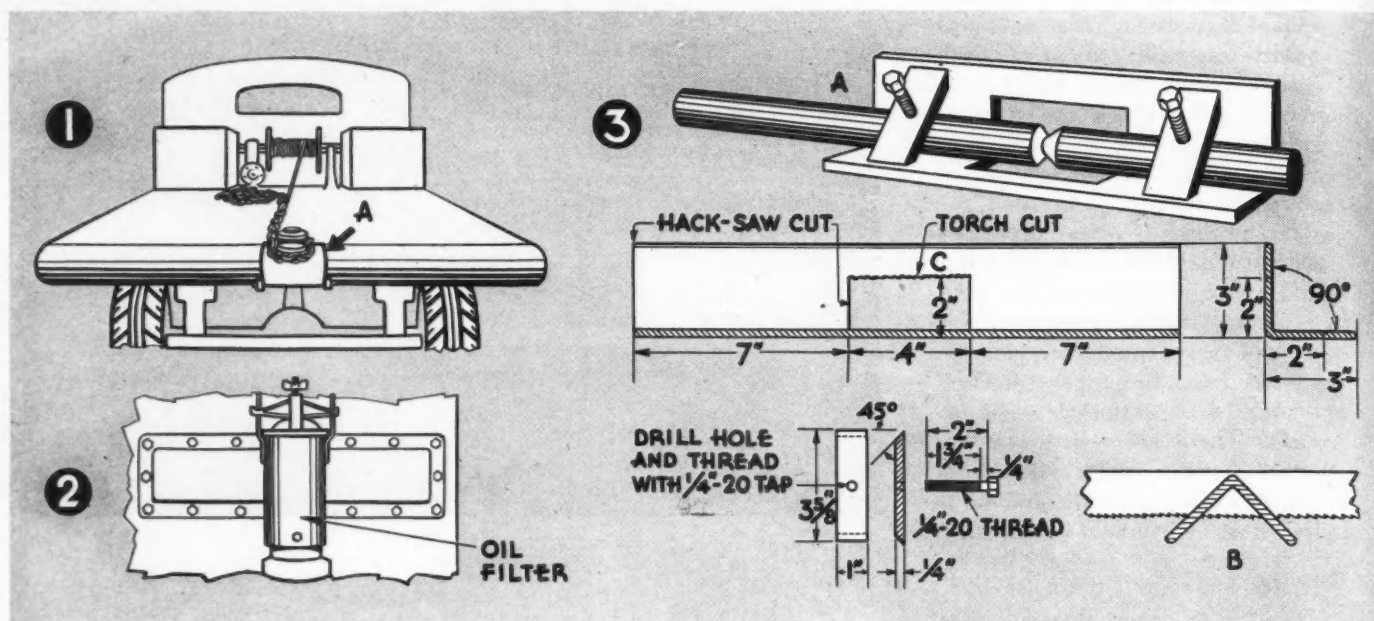
Technical Editor, Commercial Car Journal

\$5

Commercial Car Journal will pay \$5.00 for acceptable shop hints and \$5.00 for unusual parts salvage tips. Send in as many ideas as you have to the editor. Don't underestimate your ideas. Let the editor be the judge. A photograph or a rough sketch and simple explanation in your own words are enough. CCJ will polish them up for publication. Use this opportunity to earn extra money to buy Victory bonds and help win the war.

SHOP &

SHOP HINTS...



1. Winch Line Offset Guide by Pure Pipe Line Co., Olney, Ill.

In our operations we frequently find it is desirable to shift a load with the winch line in a direction not coinciding with the truck center line, and in such a location that it is not possible to shift the truck to bring about the desired alignment. To meet this problem we fitted a curved plate, shown at A, bent to the radius of curvature of the pipe forming the end of the truck bed, and attaching it with two bolts on the lower side of the unit, where it is pivoted. On the top of this plate we welded a pin which, headed, forms the bearing for the inner race of an oversize ball bearing.

When it is desired to pull at an angle, the winch line is carried around this bearing race, the groove or ball space therein serves as a pulley, the device acts as a snatch block

without the time or attention needed to attach such a unit. Due to the curvature of the mounting plate, the pulling or line strain is taken by the end member of the truck bed, instead of being transmitted to the relatively light bolts serving as hinges for the plate. The plate can be swung free, and dropped out of the way when the rear frame member is required to be free of encumbrances. Running light, the plate is lifted in place, and the ball race is used as an anchorage for the taut winch line.

2. Removing Engine Side Plate by A. Kays, Dunellen, N. J.

When removing a water jacket plate on some model Autocars it is necessary to remove the oil filter, in order to remove some of the cap screws in the jacket plate. To save time and costs, I shorten the cap screws in back of the filter by about

two or three threads, then they can be taken out without taking off the filter.

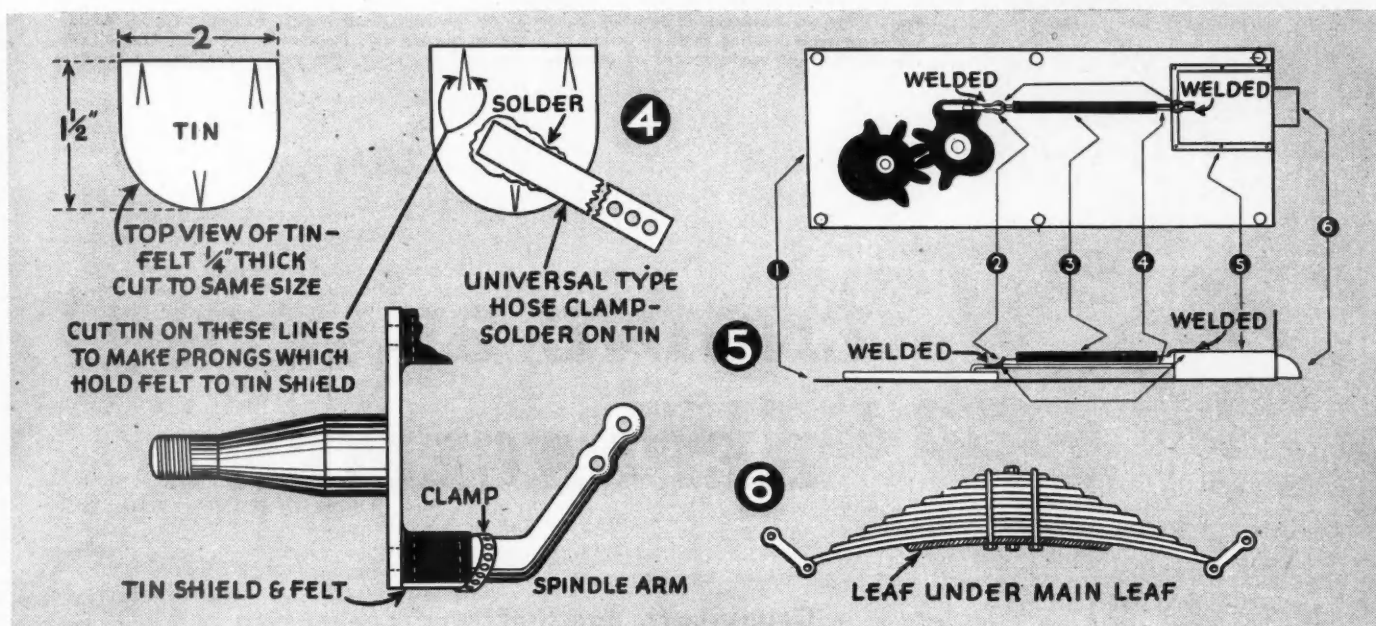
3. Building a Welding Jig By Walter Williams Kerrobeck, Sask., Canada

When repairing broken shafts by welding, I found that it was difficult to hold the two pieces of the broken shaft in true alignment while they were being welded. So I designed and built a simple jig, illustrated above, to facilitate the welding operation. As can be seen at A in Fig. 3, part of the angle iron that comprises the backbone of the jig is cut away. This enables the operator to reach the shaft to be welded from all sides, and at the same time keep it from warping during the operation.

Here is how this welding jig is made: First obtain a piece of 3-in. angle iron and cut off a section 18 in. long. Next, using a hacksaw, cut out

SALVAGE HINTS

...SALVAGE HINTS



the opening that allows the welder to reach all sides of the shaft to be welded. The size of the cut is 2 in., as shown on the drawing. This cutting operation is handled easiest as shown at B and, at the same time, enables both sides of the angle to be cut in one operation. Then, using a cutting torch, remove the other two sides shown at C.

Now check the angle iron with a straight edge, to make sure that it was not distorted during the previous operations. The next step is the welding in of the two strap iron cap screw brackets. Complete data for making these are given in the illustration. These strap iron parts should be drilled and tapped, as noted in the drawing, before welding in place. After they are welded in position, it is well to check the jig again with a straight edge to make sure it is true as, after all, this is to be used as a precision tool.

4. Saving King Pins

By George Bacher
General Baking Co., Coatesville, Pa.

To increase the life of Ford king pins we put lower grease retainers on all of the 1939 and 1940 Fords when we overhaul the front spindles. This prevents excessive wear by keeping the grease in and the dirt and water out. To do the job we take a piece of tin as shown and cut a piece of felt to match. This is where salvaged pieces of material come in handy. The tin is cut to make prongs to hold the felt and then a universal hose clamp is soldered in place to hold the assembly in position.

5. Salvaging Door Locks

By Charles Razim
U. S. Brewing Co., Chicago, Ill.

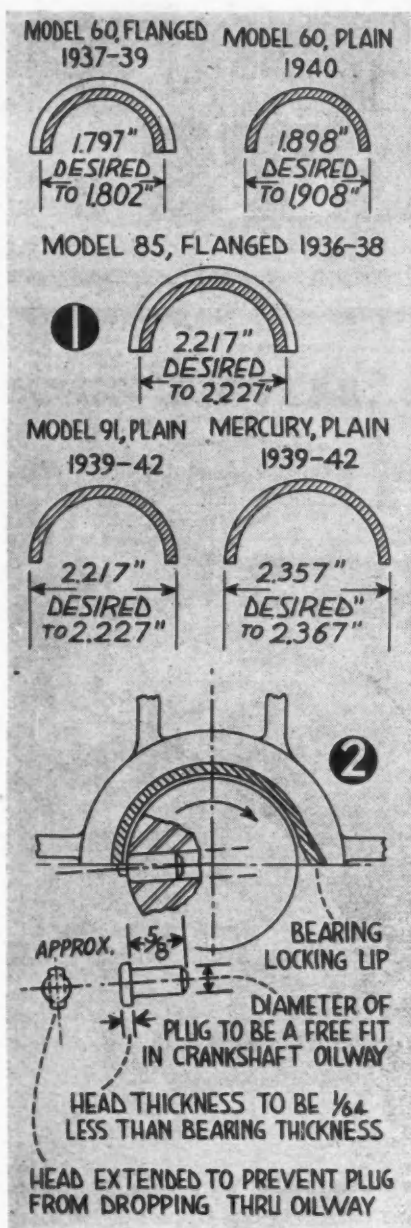
We had some trouble breaking springs in the door locks of our cabs. In the past we wouldn't bother repair-

ing them; now we repair every one. We corrected this trouble by welding a 3/16 in. cotter pin to the housing (5 in illustration No. 5) and another cotter pin to pullrod (4) at (2). Then we cut a piece of accelerator spring (3) salvaged from some old parts to fit, making an eye at each end and hooked it to the cotterspines. This has eliminated all of our trouble.

6. Prolonging Spring Life

By Gerard J. Guilmette
Coca-Cola Bottling Co., Providence, R.I.

We have found that by adding a short section of a spring leaf under the main leaf of Ford front springs we prevent breakage of the spring without interfering with the riding qualities of the car or truck. The added leaf or rebound plate is about half as long as the main leaf and made from leaves salvaged from discarded springs.



OIL CLEARANCE FOR PRESSURE (FORCE FEED) LUBRICATION			
DIA. CRANKSHAFT JOURNAL OR CRANKPIN	CLEARANCE IN INCHES TIN BASE BABBITT OR BERMAX HIGH LEAD BABBITT	CLEARANCE IN INCHES GENUINE CADMIUM SILVER COPPER	CLEARANCE IN INCHES FEDERALLOY B-30 COPPER LEAD
2 TO 2 ³ / ₄	.0015	.0020	.0025
2 ¹³ / ₁₆ TO 3 ¹ / ₂	.0025	.0030	.0035
3 ³ / ₁₆ TO 4	.0030	.0035	.0040

NOTE A: A TOLERANCE OF *PLUS .001"* IS ALLOWABLE ON THE CLEARANCES SPECIFIED
 NOTE B: OIL CLEARANCE AS SHOWN IN THIS CHART IS THE DIFFERENCE IN THE DIAMETER OF THE CRANKSHAFT JOURNAL OR CRANKPIN AND THE BORE DIAMETER OF THE BEARING.

Fig. 1. Spread dimensions of Ford V8 connecting rod bearings, models 1936 to 1942. Fig. 2. Removing upper main bearing shell by means of a special headed plug inserted in the crankshaft oilway. Fig. 3. Table of recommended oil clearances for various engine main and connecting rod bearings

ENGINE BEARING REPLACEMENT

Crankshaft, camshaft and connecting rod bearing replacement and reconditioning procedures which will help conserve parts and materials and keep trucks in service

EDITOR'S NOTE: This article is an excerpt of one in a series of technical reports prepared by the Transportation and Maintenance Activity Section of the Society of Automotive Engineers, at the request of the Vehicle Maintenance Section, Division of Motor Transport, Office of Defense Transportation, in the campaign to keep America's trucks rolling.

MATERIALS used for bearing linings (tin and lead base babbitts, cadmium alloys and copper-lead mixtures) are low in certain physical properties, therefore, they are used in combination with a higher strength back structure of steel or bronze. Until comparatively recently, the back thickness remained the same for standard size bearings

and all associated undersizes. The lining thickness was a variable and changed with the different bearing sizes.

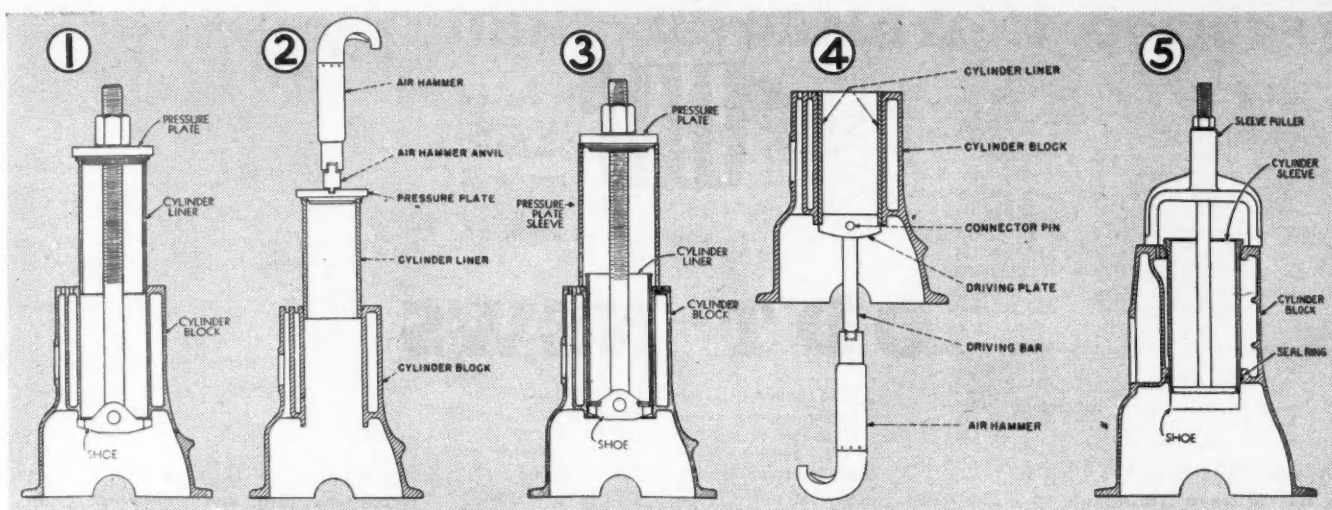
A late development in engine bearing design has been a rather drastic reduction in bearing lining thickness to a range of approximately .002 to .010 in., primarily to improve bearing mileage. To carry the benefits of this development as far as possible, many undersize bearings are now made with variable back thicknesses so that the lining thickness can be held more closely in accord with the thickness used in the standard shaft size bearing.

For example, certain manufacturers supply .060-in. undersize bearings

with a steel back thickness which will allow machining to a .030-in. undersize. For undersizes between .030 and standard, a .030-in. undersize bearing is furnished which can be machined to standard.

Copper-lead and cadmium-alloy bearings are commonly used in heavy-duty engines, but copper, cadmium and tin are obtainable only on high priorities and their availability for replacement bearings in commercial operations is questionable. The alternative is a lining of lead base babbitt.

No lead base babbitt bearings can be expected to show mileage which is equivalent to that of copper-lead (TURN TO PAGE 106, PLEASE)



Methods of removing and replacing engine cylinder sleeves of the dry and wet types. Detailed description is supplied in the accompanying article

Note: This is another in a series of technical reports prepared by the Transportation and Maintenance Activity Section of the Society of Automotive Engineers, at the request of the Vehicle Maintenance Section, Division of Motor Transport, Office of Defense Transportation, in the campaign to keep America's trucks rolling.

SAVING ENGINES WITH SLEEVES

THIS report is divided into three sections.

Section (a) treats the subject of installing dry cylinder sleeves in an engine not designed for the use of sleeves as a means of salvaging the engine, when damage or wear to one or more cylinders makes such a step necessary.

Section (b) is an outline for the installation and maintenance of dry cylinder sleeves, when used in an engine designed for their use and originally equipped with them.

Section (c) is an outline for the installation and maintenance of wet cylinder sleeves, when used in an engine designed for their use and originally equipped with them.

(a) Salvaging and Reconditioning Cast En Bloc Engines by Installing Dry Type Cylinder Sleeves

This practice is believed to be entirely practicable and advisable when any of the following conditions exist:

1. The diameter of the oversizing required will be greater than the safe maximum specified by the engine manufacturer or will necessitate the removal of more than 1/16 in. (.062 in.) of metal from the cylinder bore,

which is the limit except where cylinder wall thickness is known to be sufficient to permit greater oversize.

2. The cylinder walls are deeply scored or cracked, necessitating the removal of more than 1/16 in. (.062 in.) of metal.

3. The porosity of the metal is such that leakage is visible under test.

NOTE: Despite the widespread misconception among truck users, the use of cylinder sleeves of any type has never necessitated, and does not now necessitate, the complementary use of special pistons or rings. Standard pistons and rings are entirely satisfactory.

Procedure for the installation and maintenance of dry cylinder sleeves for engines not designed for such replacements as well as for engines so constructed

PREPARATION FOR INSTALLATION

The paramount consideration when installing dry-type sleeves in cast en bloc engines is to obtain the best possible fit of sleeve to block. Only a close and uniform fit will assure adequate transfer of heat from piston and rings through the sleeve to the cooling section of the block.

Inasmuch as the sleeve O.D. contour always conforms to the contour of the block bore and reflects any irregularities therein, it is essential that the bore of the block be as true as careful workmanship can make it. The greatest accuracy must be observed in boring and machining if

(TURN TO PAGE 126, PLEASE)



ODT NEWS

Appeal Procedure Set Up On CWN Mileage Allotments

Streamlined procedures have been set up by ODT to handle appeals from commercial motor vehicle operators who consider the mileage and fuel allotments provided in their Certificates of War Necessity to be inadequate for their needs.

A number of the original applications did not contain sufficient information for the ODT to determine with reasonable accuracy what the mileage requirements of the operators were. In such cases, Certificates were issued bearing mileage and fuel allowances designed to tide the operators over until additional information could be obtained through appeals and new or supplemental Certificates issued.

In order to facilitate the issuance of the new or supplemental Certificates to bring mileage and fuel allowances into line with the actual needs of the operators, all appeals will be handled by the ODT's 142 district offices. (See page 74, November, 1942, *COMMERCIAL CAR JOURNAL*.)

Farmers wishing to appeal for additional allotments should file their appeals through the Farm Transportation Committees of their United States Department of Agriculture County War Boards. Other operators should file appeals directly with the ODT district offices. These appeals may be filed immediately. The original 30-day provision is cancelled.

Every effort will be made, ODT officials said, to grant commercial motor vehicle operators as much mileage and gasoline as they need to carry on necessary operations on an efficient wartime basis.

Operators were urged to assist in attaining the objectives of the conservation plan by eliminating empty back hauls, partial loads, unnecessary cross hauls, and other mileage wasting practices wherever possible.

Because of the seriousness of the situation, appeals from mileage and fuel allowances in the original Certificates of War Necessity will be handled with due consideration to the rapidly dwindling rubber and equipment stockpile.

All appeals for adjustment of mileage and fuel allowances in the original Certificates, regardless of the reasons for the appeals, will be made on the same form—CWN-5-S for operators of one or two commercial motor vehicles, CWN-5-F for operators of more than two such vehicles. Operators whose original Certificates have

been lost or accidentally destroyed will apply for new Certificates on Form CWN-2.

In appealing for additional mileage and fuel allowances, operators will be required to describe in detail the purposes for which the supplemental allotments are required.

To allow time to handle appeals for new or supplemental Certificates, an arrangement has been made with the Office of Price Administration whereby commercial motor vehicle operators who claim their ODT mileage and fuel allotments are inadequate may obtain temporary transport rations sufficient to continue their operations through January.

The gallonage allowed in the temporary transport rations will be deducted from the amount finally allowed by the ODT for the period beginning Nov. 22, 1942, and ending March 31, 1943. Since this deduction will be made, it is important that operators use no more of their temporary transport rations than necessary.

ODT Moves Into 500 More Localities to Speed Appeals

To make it as easy as possible for commercial motor vehicle operators to seek adjustments in their mileage and fuel allotments, the ODT is sending its field men into approximately 500 cities and towns in which field offices are not already established.

The ODT representatives will make their headquarters in local Chambers of Commerce and will be available during the next few weeks to discuss mileage and fuel requirements with operators and to make necessary adjustments in Certificate of War Necessity allotments which have proved inadequate.

ODT officials emphasized that requests for adjustments in CWN allotments should be made promptly, since the period during which temporary transport rations may be issued by the local War Price and Rationing Boards ends January 31. After this date, fuel rations will be made only in accordance with allotments provided on the Certificates.

The ODT is deploying its field force, it was pointed out, for the convenience of operators who wish personal interviews but who do not live near any of the 142 regular ODT district offices. Operators can determine when ODT representatives will be in their vicinity by checking with their local Chambers of Commerce or watching for local announcements.

Amendment to 21 Simplifies Record-Keeping and Ordering

Procedures to be followed by commercial motor vehicle operators in purchasing parts and fuel (other than gasoline) in States where such other fuels are not rationed were simplified in Amendment No. 3 to General Order ODT No. 21 issued by the ODT.

The amendment, effective Dec. 1, also makes it unnecessary for operators of fleets of trucks or other commercial motor vehicles to keep detailed records of their vehicle operations on the backs of their Certificates of War Necessity. A fleet, under the order, is more than two vehicles.

Under the amendment parts or unrationed fuel purchases may be made without presenting a Certificate of War Necessity where it is impracticable to do so, provided the operator furnishes his name, address and certificate number to the person making the sale. A copy of the invoice covering such a purchase must be retained by the person making the sale or transfer, and the original invoice must be forwarded to the operator making the purchase. Both must carry the number of the Certificate and both must be made available for inspection by ODT representatives "at all reasonable times." This provision makes it possible for operators to place order parts by mail, telephone or telegraph.

Under the other provision of the amendment, fleet operators must keep records of all tire inspections on the backs of their fleet unit Certificates but are not required to keep mileage and loading records, since these are covered in the periodic reports which operators are required to make to the ODT on prescribed forms.

Eastman Clarifies Intent of Certificate of War Necessity

No operator of a truck or other commercial motor vehicle will be put out of business by present mileage-saving regulation, according to Joseph B. Eastman, ODT Director.

In a statement designed to clear up misunderstandings concerning the purposes of the ODT's Certificate of War Necessity plan, Mr. Eastman pointed out that a local merchant's delivery operations are being given the same consideration as those of a carrier hauling vital war materials.

Whether or not it will become necessary at some future time to "eliminate some of the less essential motor vehicle operations,"

JOINT INFORMATION OFFICES

Mr. Eastman said, "will depend on two factors:

"1. The extent to which commercial motor vehicle operators cooperate in the ODT's efforts to eliminate wasteful mileage.

"2. Whether, after all wasteful mileage has been eliminated, there is sufficient rubber to support the remaining mileage.

"What we are attempting to do and what must be accomplished is to eliminate all waste from every form of rubber borne commercial transportation, regardless of the type of traffic handled. No operator of a bus or truck should discontinue any part of his business because he was not allowed enough mileage in his Certificate of War Necessity to carry on the transportation end of such business efficiently.

"If an operator is not allowed enough gasoline for efficient operation of his commercial motor vehicle, he should go or write to his ODT district office.

"The local War Price and Rationing Boards will issue to such operators sufficient gasoline rations to continue in operation pending disposal of their appeals for revised Certificates.

"I must add a word of warning, however. If after all the wasteful miles have been eliminated we find that the remaining miles of essential transportation exceed the capacity of our rubber supply to support, it may become necessary to actually reduce or eliminate some of the less essential commercial motor vehicle operations. I hope that that time will not come and I don't believe that it will if we will all work together on this job and cut out the wasteful mileage."

ODT Takes Care of Farmers Dissatisfied with Mileage

In a message to the farmers, stock raisers and dairymen of the United States the ODT said that "No farmer is to be put out of business as a result of the ODT's Certificate of War Necessity plan. As long as the tires, spare parts and gasoline are available, the ODT will help every farmer get enough tires, spare parts and gasoline to carry on his necessary truck operations.

"Any farmer who is dissatisfied with the amount of mileage and gasoline allowed in his Certificate of War Necessity for his truck or trucks should take the matter up immediately with his County Agent, his County War Board or his County Farm Transportation Committee.

"If the County Agent, the County War Board or the County Farm Transportation Committee is convinced that any farmer should have been granted more mileage and gasoline in his Certificate of War Necessity the committee will recommend that a revised Certificate be issued.

"This recommendation will be made to the ODT district manager serving the county in which the farmer lives.

(TURN TO PAGE 50, PLEASE)

Location, address, management and service charges (in all available cases) of 45 offices approved by ODT as of Dec. 10, 1942. This listing will be kept up to date in future issues.

AMARILLO, TEXAS—200 North Fillmore St. Manager: Mrs. Lucille D. Gilley. Service charges: Clearance statement, 25c; assignment of traffic—one to 100 miles, \$1; 101 to 300 miles, \$2; over 300 miles, \$3.

ATLANTA, GA.—510 Chamber of Commerce Bldg. Manager: Roy J. Bowden. Service charges: Charge for clearance or assignment of traffic or vehicles is based on number of trucks operated, as follows: 1 to 10 trucks—\$5 monthly; 10 to 20 trucks—\$7.50 monthly; 20 to 30 trucks—\$12.50 monthly; 30 to 50 trucks—\$15 monthly. Non-contributing or non-sustaining common carriers to pay for traffic diverted to them by or through the J. I. O. at 10c per 100 lbs.

BALTIMORE, MD.—Room 507—22 Light St. Manager: Walter Kneip. Service charges: \$1.

BUFFALO, N. Y.—275 Fuhrman Blvd. Manager: William A. Mackay. Service charges: \$1 each.

CANTON, OHIO—409 Commercial Bldg., 205 Market St. South. Manager: A. R. McConnell. Service charges: Clearance statement, \$1; Assignment of traffic, \$2.

CHARLOTTE, N. C.—1723 N. Tryon St. Manager: W. D. Wilkinson. Service charges: Clearance statement, \$1; Assignment of traffic, 5c per 100 lbs.; Minimum, \$1.

CHICAGO, ILL.—10 North Clark St. Earl Girard, chairman, Board of Governors. Service charges: Clearance statement, 25c. Assignment of traffic—1 to 100 miles, \$1; 101 to 300 miles, \$2; over 300 miles, \$3.

CINCINNATI, OHIO—3129 Spring Grove Ave. Manager: C. T. O'Donnell. Service charges: Clearance statement, 50c. Assignment of traffic—full truck, \$1; less than full truck, 75c.

CLEVELAND, OHIO—1218 Standard Bldg. Manager: Edwin C. Reminger. Service charges: Clearance statement, \$1; Assignment of traffic, \$2.

COLUMBIA, S. C.—1316 Washington St. Manager: J. T. Outlaw. Service charges: No charge for clearance statement; assignment of equipment or traffic (partial or full load)—5c per 100 lbs. up to 4000 lbs.; 3c per 100 lbs. above 5000 lbs.; minimum charge, 50c; maximum, \$5.

COLUMBUS, OHIO—3660 A.I.U. Bldg. Manager: Harvey G. Wagner. Service charges: Clearance statement, 25c; lease of vehicle, \$1; traffic assignment, \$1.

DALLAS, TEXAS—301 North Market St. Manager: Edwin R. Joyce.

DENVER, COLO.—410 Denham Bldg. Manager: William A. Bosma.

DES MOINES, IOWA—400 S.W. Ninth St. Manager: John I. Petty. Service charges: Clearance statement, 25c; assignment of traffic, \$1.

DETROIT, MICH.—1627 W. Fort St. Manager: Carl S. Holeccheck. Service charges: Clearance statement, 50c; Assignment of traffic, \$1.

DISTRICT OF COLUMBIA—1525 New York Ave. N.E. Manager: J. R. Scott. Service charges: Assignment of traffic, \$1.

FARGO, N. D.—406 First Natl Bank Bldg Manager: W. H. Clemens.

FLINT, MICH.—509 Harrison St. Manager: Miss Ann Marvosh.

FORT WAYNE, IND.—826 Ewing St. Manager: Scott E. Weller. Service charges: Clearance statement, \$1; assignment of traffic (partial or full load), \$1; lease of equipment, \$1.

FORT WORTH, TEXAS—701 Pecan St. Manager: Fred E. Kibler.

GRAND RAPIDS, MICH.—101 Lyon St. N.W. Manager: Howard H. Harlow. Service charges: Clearance statements—from one to 10, \$1.50 each; 11 to 50, \$1 each; 51 and over, 50c each. Assignment of equipment or traffic, \$1.50.

GREELEY, COLO.—716 Twelfth St. Manager: Miss Sara Anderson. Service charges: Clearance statement, 10c; Assignment of traffic—25c per ton with minimum charge of \$1.

HAGERSTOWN, MD.—113 Washington St. Manager: Miss Betty M. Winn.

HOUSTON, TEXAS—1006 Washington Ave. Manager: B. Frank Johnson. Service charges: Clearance

statement, 25c; Traffic assignment up to 100 miles, \$1; 101 to 300 miles, \$2; over 300 miles \$3.

INDIANAPOLIS, IND.—611 K. of P. Bldg. Manager: Mrs. Catherine L. Goldsboro. Service charges: The minimum assistance or service charge is \$5. In addition, there is a charge for each clearance statement over and above four per month—25c. Assignment of traffic—1 to 100 miles, \$1; 101 to 300 miles, \$2; over 300 miles, \$3.

KANSAS CITY, MO.—127 Livestock Exchange Bldg. Manager: James E. Lockwood. Service charges: Clearance statement, 25c. Assignment of traffic,* 25c. *Option: Annual basis, \$18.00 per year.

LANSING, MICH.—315 Hollister Bldg. Manager: H. C. Kuhnert.

LOUISVILLE, KY.—701 Republic Bldg., 5th & Walnut Sts. Manager: Lew Ullrich. Service charges: Clearance statement, 25c. Assignment of traffic*—1 to 100 miles, \$1; 101 to 300 miles, \$2; over 300 miles, \$3. Assignment of empty equipment*—1 to 150 miles, \$1; over 150 miles, \$2. (*AAA mileage shall govern.)

LUBBOCK, TEXAS—1801 Texas Ave. Manager: W. D. Benson, Jr.

MANSFIELD, OHIO—3 N. Main St. Manager: James L. Eberly. Service charges: Clearance statement, 50c; Assignment of traffic, \$2.

MEMPHIS, TENN.—720 Linden Ave. Manager: Charles E. Steele. Service charges: Each clearance statement issued in excess of four per calendar month—50c each. Assignment of equipment or traffic—100 miles or less, \$1; 101 to 300 miles, \$2; over 300 miles, \$3.

MOBILE, ILL.—301 Ninth St. Manager: Thomas H. Smith. Service charges: Clearance statement, 25c. A carrier furnishing equipment for the movement of traffic from one to 100 miles, \$1; 101 to 300 miles, \$2; over 300 miles, \$3 (AAA mileage shall govern). In lieu of the above charges, carriers may elect to pay a flat rate per month (payable in advance) which is \$5 for common carriers, \$3 for contract carriers and \$2 for private carriers.

MUSKOGEE, OKLA.—207 Municipal Bldg. Manager: Ted Schwachhofer.

NEW ORLEANS, LA.—1461 Magazine St. Manager: Robert Matthews. Service charges: Clearance statement, 25c; Assignment of traffic or vehicle—1 to 100 miles, \$1; 101 to 300 miles, \$2; over 300 miles, \$3. (AAA mileage to govern.)

ORANGE, CAL.—302 W. Maple St. Manager: J. D. Spennetta. Service charges: Clearance statement, 25c; where tonnage is obtained the charge will be 5% of the gross revenue, minimum, \$1.

PHOENIX, ARIZ.—45 W. Lewis Ave. Manager: Robert F. Goff. Service charges: Clearance statement, 25c; assignment of freight, based on length of trip—1 to 100 miles, \$1; 101 to 300, \$2; over 300, \$3.

PITTSBURGH, PA.—Fort Pitt Hotel. Manager: Robert E. Cox. Service charges: Clearance statement, 35c; Assignment of traffic (full or partial load)—up to 300 miles, \$1; over 300 miles, \$2.

PROVIDENCE, R. I.—Room 503, 85 Westminster St. Manager: Francis E. Nute. Service charges: Clearance statement—empty vehicle 25c; Traffic assignment, \$1.

ROCKFORD, ILL.—121 Loomis St. Manager: Theodore H. Nelles. Service charges: Clearance statement, 25c; Assignment of traffic or vehicle—1 to 100 miles, \$1; 101 to 300, \$2; over 300, \$3.

ST. PAUL, MINN.—1957 University Ave. Manager: Lou Hosking. Service charges: 10c registration fee for each vehicle. No additional charge for clearance statement. When a carrier receives a load of freight through the Joint Information Office, the charge will be 5% of the revenue accruing to such carrier, with a minimum fee of 25c. This latter fee will be in addition to the 10c registration fee.

SAN ANTONIO, TEXAS—603 N. St. Mary's St. Manager: D. R. Thomas. Service charges: Clearance statement, 50c; Assignment of traffic—1 to 100 miles, \$1; 101 to 300, \$2; over 300, \$3.

SIOUX CITY, IOWA—119 Livestock Exchange Bldg. Manager: John Shannahan.

SOUTH BEND, IND.—802 S. Lafayette St. Manager: James E. Gilroy. Service charges: Assignment of traffic or vehicle—1 to 100 miles, \$1; 101 to 300 miles, \$2; over 300 miles, \$3. Clearance statement, 25c. (AAA mileage to govern.)

SPOKANE, WASH.—512 Columbia Bldg. Manager: R. P. Corolus. Service charges: Clearance statement, 25c; Assignment of traffic—up to 100 miles, \$1; 100 to 200 miles, \$2; over 200 miles, \$3.

WAUSAU, WIS.—105 Prospect St. Manager: Franklin H. Seefeldt. Service charges, 25c each.

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VALUABLE AIDS FOR FLEETMEN

A selected list of the latest literature — books, pamphlets and catalogs — intended to help fleet operators solve maintenance and operating problems. They are more valuable today than ever before. All are free. To get your copies simply fill in the numbers on the postcard and mail. No stamp is needed.

L65. Color Visualizer

Probably one of the most ingenious aids ever to come to our attention for determining harmonious body and trim colors and color combinations has just been received with the word that fleet operators may have one free for the asking. It is called a color visualizer and every fleet operator should have one.

The visualizer is designed along standard color sample book lines, except that it has several transparent celluloid page inserts, called masks, on which large illustrations of trucks and a business coupe are printed in outline. The assortment of samples includes 50 different color pages which are split in two so that two color combinations can be used together on the same body illustration. A table of harmonious color combinations also is supplied as a basic guide.

Every fleet operator now can see his fleet in a parade of attractive, attention-compelling colors without resorting to costly experimental paint jobs.

The visualizer is attractively prepared with a unique self cover having snap fasteners to keep it shut and keep the colors from becoming soiled from exposure. Hurry and get your copy. Just write L65 on the free postcard.

L66. Free Truck Wax Sample

Described on the opposite page is S. C. Johnson & Son's new Transportation Maintenance Wax. We have just been advised that the company will be glad to send a pint as a free sample to any fleet operator who would like to give this new product a trial. All that is necessary to try Transportation Maintenance Wax without cost or obligation is to write L66 on the free postcard inserted between these pages.

L67. Lubrication and PM Charts

A series of truck lubrication and preventive maintenance charts are available without cost to truck operators. The lubrication charts are diagrammatic, with all lubrication points clearly indicated and both the correct lubricant and correct lubrication period specified. Information is also given about engine, transmission, rear axle, cooling system, and gasoline tank capacities; also about tire sizes and correct pressures.

The charts cover popular makes and models of trucks. For trucks which cannot be taken care of by this type of chart, special chart forms are available which will furnish personalized recommendations to meet an operator's lubrication requirement for any type of truck.

The preventive maintenance charts enable operators to maintain a check-up on needed lubrication and the servicing given to every truck. They show the attention needed daily and the lubrication servicing required at periods of 1,000, 5,000 and 10,000 miles respectively, with columns in which the servicing check-up can be recorded. These charts can be of great utility to fleet operators. Write L67 on the postcard for your free copies.

L68. Piston Ring Manual

A new 75-page manual giving instructions on the proper methods to use in the installation of piston rings, plus engine listings showing the correct ring sizes and types for all trucks and passenger cars, is now available free to CCJ readers. It is chock full of valuable service information and recommendations for helping operators to secure longer life from ring jobs.

A new section, which should prove of interest to army officers, lists ring sizes and

types for all army vehicles. Any officer or man in the armed forces can obtain a free copy of this manual for the asking. Of particular interest is the 19-page picture story which presents basic fundamentals of piston ring installation and their importance to successful engine operation. A valuable manual for every operator for his shop file. Write L68 on the postcard for your free copy.

L69. Metallizing Figures

For the operator who desires to know all the facts and figures on the process of metallizing, a new publication is now available to him. It explains what metallizing is, what it does and the equipment necessary for successful operation. Not only does it show various applications where metallizing has been used, but also gives time estimates and cost figures on metallizing and finishing truck and bus parts. It should prove of special interest to fleet operators who desire to know the actual cost of salvaging certain truck parts by this method. Write L69 on the postcard for your free copy.

L70. Lathe Care Manual

Lubrication is just as important to shop machinery as it is to trucks. The length of time a lathe will retain its accuracy and give satisfactory service depends on the lubrication and care it receives from the operator. Operators will find much helpful information in a new 19-page booklet entitled "Oiling The Lathe." This booklet emphasizes the importance of proper lathe lubrication in maintaining maximum performance and accuracy. It outlines a regular procedure of oiling with proper lubricants at definite intervals. This booklet will be helpful to the operator of any size lathe, regardless of make. Write L70 on this postcard for your free copy.

L71. Brake Fluid Facts

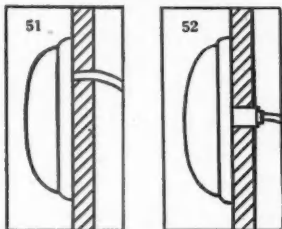
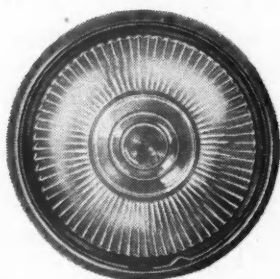
Here is a handy little booklet for fleet operators, telling all about hydraulic brake fluids and the proper method to use in bleeding hydraulic brakes. The booklet enumerates all the qualities that a brake fluid should have to give satisfactory service. It should be useful to all operators desiring all the facts on hydraulic brake fluids. Write L71 on the postcard for your free copy.



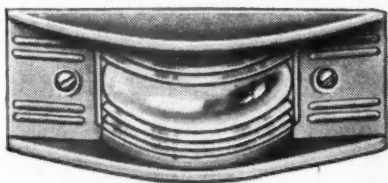
NEW PRODUCTS ★

P67. Clearance Lights

Three new clearance and marker lights are being offered by the R. E. Dietz Co., New York, N. Y. Two of these are designed for flush mounting with minimum projection, while the third is the projecting type but of shallow design.



Models 51 and 52, above, extend only 1 1/8 in. yet afford a full 180 degree arc of visibility. The design and construction provides maximum protection against breakage. As shown above, Model 51 is designed for full flush mounting, no drilling required, and Model 52 also is designed for flush mounting but requires the drilling of a 1/2-in. hole for bulb socket.



Model 91, above, constitutes an entirely new design in the Dietz line. It is an attractive unit employing fresnel lens which assure 180 degree visibility. The heavy steel body makes it practically indestructible.

Use free postcard for more details

P68. New Heavy Duty Spark Plug

Auto-Lite ignition engineers have designed a new heavy duty spark plug for use on trucks and busses operating under

FOR FLEET OPERATORS

The latest in shop equipment, supplies, replacement parts and accessories developed by manufacturers for fleet operators. For more details of any product described, fill in the number on the postcard and mail. No stamp needed. Also use the postcard for additional information on any product advertised in this issue.

extremely severe service conditions. This heavy duty plug introduces a new design and new features which make possible new service capacity. This new plug has not been designed to replace the standard Auto-Lite line for normal operation.

Use free postcard for more details

P69. Water Leak Compound

For quick and reliable repair of cracked cylinder heads, engine blocks, water jackets and valve ports in automobiles, trucks and tractors, the Du Pont Company is introducing a new product in its No. 7 Line called "Motor-Weld."

Cracks are sealed securely without clogging or harming the cooling system of engines, the manufacturer reports. It is said that the compound functions equally well in alcohol, or standard anti-freeze solutions, as in water.

Motor-Weld is poured into the radiator after the water in it has been warmed by running the engine. It is claimed that the contents of the one pint bottle will seal even large leaks and, if left in the cooling system, will help prevent further leaks from developing.

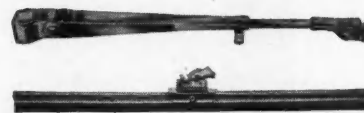
Further reports state that Du Pont chemists engaged in the development of Motor-Weld have eliminated the defects likely to be inherent in block-welding compounds. The new fluid does not have an unpleasant odor nor is it loaded with heavy solid matter that might clog the thin tubes of modern radiators.

Use free postcard for more details

P70. Windshield Wipers

Now it is possible for fleet operators to procure the same ANCO Windshield Wiper Arm and Windshield Wiper Blade used by the Army for many Army replacements. It is available through jobbers handling RAIN-MASTER Arms and Blades manufactured by The Anderson Co., Gary, Ind.

One model ANCO "Truck Special" Arm, extensible from 7 1/2 in. to 12 in., replaces practically all civilian truck arms, as well as more than 60 different non-interchangeable Army truck arms. The ANCO Truck



Special Blade, in four lengths, takes care of replacements on practically all civilian trucks. These products embody all the patented and superior features of the popular ANCO Rain-Master arms and blades.

Use free postcard for more details

P71. Low Angle Hack Saw

This new low angle hack saw, made by The New Britain Machine Co., New Britain, Conn., will be found very useful for numerous jobs around the shop. It is 13 in. long and comes equipped with a 10-in. waveset blade.

One of the features of special interest to the shop man is the fact that any type



of hack saw blade can be used for replacement. Moreover, the construction of the frame is such that even broken pieces of hack saw blades can be used satisfactorily.

Use free postcard for more details

P72. Fleet Maintenance Wax

To meet the demand of fleet operators for a fast and economical method of waxing their vehicles to protect and preserve the finish, S. C. Johnson & Son, Inc., Racine, Wis., has developed an entirely new type of wax finish as well as a new method of applying it. The new product

(TURN TO PAGE 124, PLEASE)



Left: A typical unit of Ballard's fleet. Below: One of the 100,000 mile tires as received from the recapper. Note the anti-scuff marks painted on the sidewall. This practice reduces curb rubbing and, as a result, increases number of tires that can be recapped

A DAIRY'S SUPER-MILEAGE FORMULA

10-year maintenance program embracing an 8-point tire service plan brings new tire mileage up to 70,000; some reach 100,000

by WM. LARMORE

Shop Superintendent, Ballard Ice Cream Company, Indianapolis, Ind.

UNDER a planned maintenance program that dates back more than 10 years, a substantial number of our 47 trucks now have 300,000 miles and more to their credit, and still going strong. In line with our method of chassis maintenance, we gradually raised our new tire mileage until it now ranges between 60,000 and 80,000 miles. The best record to date on original rubber is 100,000 miles on one pair of tires used on dual rears. In addition, we are getting two and three recaps on many of our tires, and the number of casings suitable for the second and third recap is steadily increasing.

Fortunately, our peace-time tire service program was of a pattern well adapted to the present emergency, when even more rigid maintenance is necessary to make our equipment survive the bans on tires and trucks, soften the labor shortage and compensate for the restricted deliveries of replacement parts.

The two high record tires were in perfect condition for recapping when they were taken off the wheels. Neither tire had ever been flat. In fact, we had to use a power tire spreader to remove the tubes without tearing them to pieces. One of these tires, after being recapped, is shown at left; manifesting convincing proof that good care and proper service are all that we need to obtain all of the available mileage of our tires.

A recent examination of two other tires on the same truck, used by the same driver, disclosed that they had 60,000 miles on them, and they look good for 25,000, perhaps 40,000, additional miles. We are looking forward to a record exceeding the previous high of 100,000.

Moreover, our long-term tire saving practices have enabled us gradually to build up the percentage of carcasses that can be recapped. Even more importantly, we now get two and three recaps per carcass on many of our city operated trucks.

(TURN TO PAGE 62, PLEASE)

Right: Charted for quick visualization are the ups and downs and the trend of traffic and revenue on the Pennsylvania toll turnpike. Bottom graph shows truck tolls mounting steadily upward since the road opened to overtake more numerous passenger cars

ON Sept. 30, 1942, the Pennsylvania Turnpike—the 160-mile toll - charging superhighway between Harrisburg and Pittsburgh—wound up its second year of operation with trucks leading the dollars-and-cents parade and building up a beautiful case which may be used against them come peace, reconstruction and schemes for building super-duper-highways willy-nilly all up and down our whole creation.

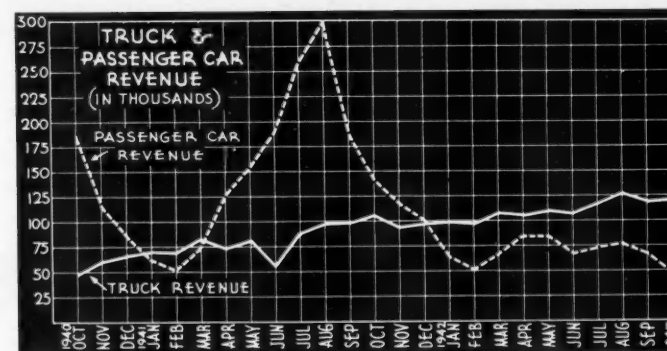
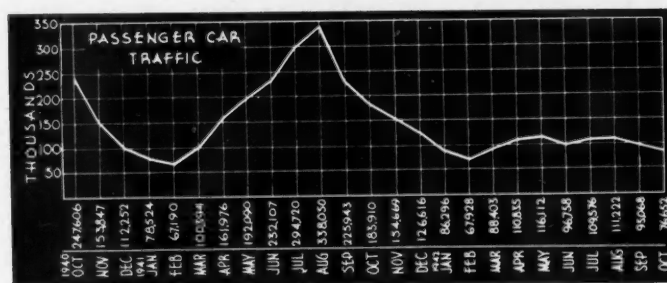
During this second year of operation 320,258 trucks bought toll tickets averaging \$4 apiece and thereby contributed \$1,282,819 to the Turnpike's treasury. This represented a 30 per cent increase in trucks, an 11 per cent increase in average tolls, and a 45 per cent increase in the total amount paid in as compared with the first year of operation.

Passenger car statistics showed decreases in the second year when 1,347,393 passenger cars paid an average toll of 73 cents for a total of \$994,051. Compared with the first year these figures represented decreases of 39 per cent, 10 per cent and 46 per cent, respectively.

In the case of trucks, tractor-semi-trailer combinations accounted for 58 per cent of the total units and 80 per cent of the truck revenue.

The patronage which trucks are giving to the Turnpike is indicative of the basic fact that truck operators must be getting their money's worth. They are businessmen and not in the business of giving away money. But there isn't a state highway department in the United States that isn't keeping a watchful eye on the millions that vehicle operators are voluntarily giving to the Turnpike for the privilege of using a highway which parallels other state highways that are free. After the war, when road-building projects are proposed to take up unemployment slack due to industrial readjustment, will these departments advocate higher state levies to defray their cost and argue that if trucks can economically af-

(TURN TO PAGE 60, PLEASE)



TWO YEARS OF TURNPIKE OPERATION

A statistical exercise in which only toll road proponents will find comfort; truck traffic tops predictions in second year

(Charts and analysis are based on monthly statements of traffic and revenue issued by the Pennsylvania Turnpike Commission)



LOW OCTANE VS. CON-ROD BEARINGS

Reports from the field indicate that in heavy-duty service the soft-metal bearings are failing where knock is present

THE combination of low-octane gasoline and the new soft-metal bearings seems to be causing trouble in some engines, according to field reports. The premature failures so far reported are restricted to the connecting rod bearings and only to certain engines. Solutions have been worked out which are presented in this article. Fleet operators who are experiencing trouble will find the solutions helpful and other operators would do well to

familiarize themselves with the difficulties so that they will recognize them immediately when they occur and be able to prescribe the cure. There is no certainty that similar trouble will not be experienced with other engines.

A few preliminary facts will give fleet operators a good grasp of the situation as it exists at this particular time.

Since the beginning of 1942 the use of cadmium, copper, silver,

nickel, tin and other critical metals used in the manufacture of automotive bearings has been restricted by the government. To provide replacement bearings it has been necessary to go to a soft-metal base. Today the lead-babbitt, or soft-metal, bearing is the only type that is being manufactured for civilian use. When stocks of the hard-metal bearings are consumed (as they now appear to be) the soft-metal bearing will be the only type available.

While it is admitted that the hard-metal type of bearing is superior to the soft-metal type, the trouble that is being experienced with connecting rod bearings cannot be blamed on the soft-metal bearing alone. The trouble so far has occurred only in heavy-duty service and in high-compression engines. Otherwise the soft-metal bearings are, generally speaking, giving satisfactory service.

The contributing cause of trouble seems to be in the quality of gasoline used in the troublesome cases. The government has also restricted the use of tetra-ethyl lead which is used quite generally to increase the octane rating, or anti-knock quality, of regular grades of gasoline. Governmental restriction has limited the amount of tetra-ethyl lead that may be used and has caused a lowering of anti-knock quality. Consequently engines that were designed to run on 75 octane gasoline are compelled to get along with 70-octane gasoline or lower.

The result is that combustion cannot be properly controlled in the high-compression engines. A hammer-like blow instead of a powerful thrust action is placed on the pistons, wrist pins, connecting rod bearings and other working parts of the engine. This detonation or knock seems to have its most serious effect on the connecting rod bearings.

Such is the problem that has been thrown in the laps of bearing manufacturers and oil companies for solution. After many tests in the field with high-compression engines they agree that if it is necessary to use low-octane gasoline, detonation or pinging must be eliminated if improved service is to be expected of the soft-metal bearings. It is possible to retard the ignition timing to eliminate the "pinging". However, experience has proved in many in-

(TURN TO PAGE 122, PLEASE)

Right—ODT Director John L. Rogers inspects a tire good for recapping after 146,000 miles

JAN. 15, 1943, being the deadline for the first tire inspection that commercial motor vehicles must undergo under the terms of the Certificate of War Necessity Order No. 21, ODT has issued reminders to guide fleet operators in the proper manner in which to make the first and subsequent inspections.

These reminders include the following: Effective date; intervals at which inspections must be made; how fleets can designate tire inspectors; maximum charges that independent tire inspectors may make; what inspectors must check; and points on recapping.

A commercial motor vehicle may not lawfully be operated after Jan. 15, 1943, without an endorsement by an approved tire inspector on the vehicle's Certificate of War Necessity. After that date, commercial motor vehicles must have tires inspected at 60-day or 5000-mile intervals, whichever occurs first.

Purpose of the periodic tire inspections is to insure proper tire conservation. Under the inspection plan, operators will be required to make all possible repairs, adjustments or replacements necessary to insure maximum service from their tires.

All inspections will be made by persons designated for the purpose by the Office of Price Administration's War Price and Rationing Boards.

OPA officials said that many commercial fleet operators probably have service and maintenance employees who could qualify as tire inspectors. Employees selected by employers could seek official appointment by the local War Price and Rationing Board. If appointed, the employees then could make the necessary inspections of vehicles in the fleet. Applications for the position of tire inspector should be made by letter—no official form has been set up—to the applicant's local War Price and Rationing Board.

The point has not been officially clarified but **COMMERCIAL CAR JOURNAL** understands that fleet-employed inspectors will have no authority beyond meeting the tire



TIRE INSPECTION REMINDERS

A summary of pertinent data that fleet operators will find useful in complying with Federal conservation requirements

inspection requirements of ODT Order No. 21. In this respect they will differ from independent inspectors named by OPA who will also have authority to certify eligibility for recaps and new tires. In other words, a fleet operator will have to call in an independent tire inspector when seeking a rationing certificate for a new tire or a recap.

Contrary to instructions previously issued in the booklet furnished with the application blanks for Cer-

tificates of War Necessity, independent tire inspectors may charge for their inspection services, the ODT said, but the maximum price which they can charge has been set by OPA Price Regulation No. 165, as amended. This regulation sets the ceilings on service charges generally at the March, 1942, level.

It is expected that in many cases the examinations will be made without charge, particularly where the
(TURN TO PAGE 60, PLEASE)

TUBELESS TIRES

PRO AND CON

Brief sketches of the proposed designs and a glance at the problems of seepage and carcass porosity that must be solved

EDITOR'S NOTE—Until authoritative sources reveal more details this article may serve to feed current curiosity on tubeless tire developments.

THE current rubber shortage is focussing attention on the development of tubeless tires. All of the major tire companies are reported to be working on such tires, but so far only two developments have been made public. One of these concerns heavy-duty vehicles and the other passenger cars and light trucks.

Credit for the heavy-duty development belongs to the B. F. Goodrich Co. Such details of the Goodrich tubeless tire as have been revealed deal solely with its mechanical features. The changes that may have been made in the tire casing have not yet been disclosed. The only fact made known about the casing of the tubeless tire is that it is "air-tight" and effects a "7 per cent saving in the rubber needed for the conventional casing, tube and flap." Any saving is important, but this statement leaves to conjecture the exact percentage of rubber saved by the elimination of the inner tube and flap. It inspires the assumption that only part of the rubber in the innards is saved and that the rest is used in the casing to overcome the shortcomings of the conventional casing. As a matter of fact, if this assumption is correct, then the Good-

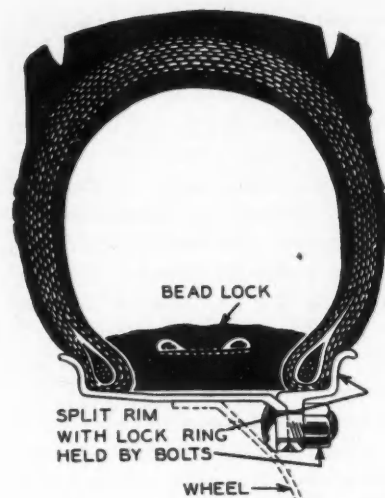
rich development has a distinct edge in the tubeless tire race.

The Goodrich tubeless tire utilizes a new bead lock of non-critical material that retains the air in the casing. This bead-lock is adaptable to any heavy-duty type of tire for use on flat base rims with a solid flange or divided wheels. It makes for easy tire changing. The outer flange can be unbolted and the casing slipped off, requiring no special tools.

Goodrich claims that the air-tight casing makes it possible to operate with 10 deg. less heat generated. An indoor test on a machine simulating road condition was made with a 6.00/16 casing with a 915-lb. load and an initial inflation pressure of 33 lb. After 19,248 miles of testing the pressure loss was only 3 lb.

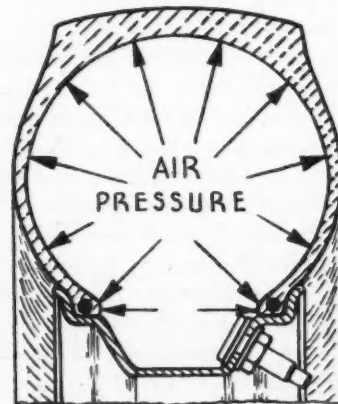
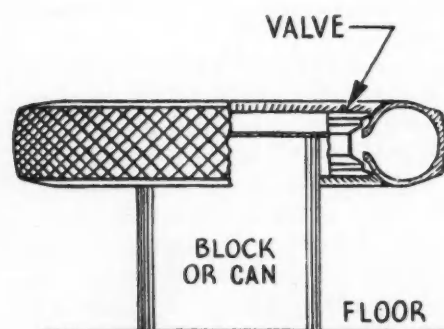
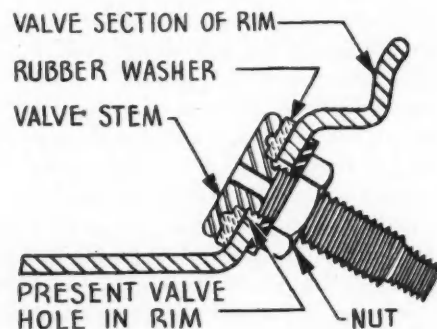
The tubeless tire for passenger cars and light trucks—referred to as the McGay tire—is credited to John B. McGay, a Tulsa, Okla., timing instrument manufacturer. It is not a manufactured product. It is a method for converting any standard passenger car or light truck tire into a tubeless tire. There are two major requirements: the wheel rim must be of the drop-center type, and the

(TURN TO PAGE 68, PLEASE)



Courtesy Army Motors

Illustrations of the Goodrich tubeless tire have not been made public. The above tire, in use by the Army, appears to incorporate some of the features which characterize the Goodrich design. Below—Details of the McGay proposal





Robert Cass

IT takes the pressure of war to inspire and force tremendous advancements in the realm of science and industry — advance-

ments which ac-

tually crowd many normal years of progress into one. This has been demonstrated before, and it is being demonstrated once again. Much as we deplore war, there are bound to be some outstanding benefits for present and succeeding generations. The creation of new materials and new material sources, for example, will have considerable effect on our future economy, and certainly the progressive influence will make itself felt in the field of truck engineering.

During the First World War there were many examples of how new or improved materials were made available, and these had a marked effect on consumer goods in the post-war era. Other existing materials were made available in much greater quantity.

In the radio and automotive fields we find many striking instances where the wartime developments took solid root. At the end of the war, for example, there were some 30 million gallons of phenol which had been used in making explosives. Until that time only limited quantities had been provided for the dipping of sheep. With the advent of peace once again, the Government decided to release the existing supply, gradually, through regular marketing channels at a very low price. The result was that the radio industry snapped it up because phenol represented the secret of making bakelite products at low cost. Thus the radio industry went ahead by leaps and bounds. The chemists, seeing the need, made it possible to produce phenol so low in cost that it became economically sound for the radio manufacturers to continue to use it in quantity.

In a similar way the deep drawing of steel was made possible by the experimental use of machinery which had been designed for war production use. This paved the way for low-priced, deep drawn sheet steel which, in turn, made possible our large volume of automobile bodies at low cost. Many other ex-

POST-WAR TRUCK DESIGN

Wartime developments will markedly affect post-war product with chemical and designing engineers closely associated

by ROBERT CASS

Chief Engineer, The White Motor Co.

amples could be cited in relation to the First World War, and today there are many signs of what we can expect as the result of present war developments.

Perhaps most significant of the trend coming out of World War II is the increasingly important part which the chemical engineer will play in the post-war period regardless of what product we may mention. The truck situation will possibly depend on the ability of the chemist to combine various elements and initiate stable compounds which will permit engineers to produce more power per pound of metal than ever before and at a new low cost level. This will have a pronounced effect on our post-war economy and the transportation picture of the future.

As an example, it is generally well known that we shall have a capacity in aluminum seven times that of 1939 which, up to that time, was a peak year. Not only will we have a greatly increased supply of primary aluminum, but a trend to high-grade secondary material which this war has shown to have great promise in the making of all kinds of products previously confined to the primary metal. Under such circumstances we

can envision a relatively low price per pound as compared to pre-war levels.

Magnesium, a metal little used in this country before the war, comparatively speaking, may be much more extensively used in the post-war era if the production trend follows that of aluminum, and it undoubtedly will. The weight of magnesium is 60 per cent as great as that of aluminum and just as low in price per cubic foot, so it offers great possibilities in reducing the weight of vehicles if properly handled.

Similarly, rubber is taking an entirely new part in the picture. After slightly more than two years we propose to manufacture synthetic rubber in a quantity equal to that which required almost a century to build up in natural rubber. There is no reason to doubt but what ingenuity, the hallmark of industrial expansion in this country, will apply just as truly to our synthetic rubber industry to the end that it will become definitely sound in post-war economy.

Steel likewise has a very different story to tell in the future from the standpoint of its alloys. An analysis recently made in the aircraft industry (TURN TO PAGE 68, PLEASE)

ODT NEWS

(CONTINUED FROM PAGE 41)

"All ODT district managers have been instructed from Washington to accept the recommendations of the County Farm Transportation Committees, unless such recommendations contain obvious errors."

125 Ice Cream Makers Enter Joint Action Conservation Plan

Paving the way for similar action throughout the nation, the ODT on Dec. 12 approved a joint action plan for conservation of truck mileage by more than 125 ice cream manufacturers in Pennsylvania, New Jersey, Delaware, Virginia and Maryland. The plan is designed to conserve truck equipment through sharply curtailed deliveries.

Under the plan, dairies and other ice cream manufacturers participating will reduce deliveries to retailers and wholesalers in accordance with the following schedules:

1. Deliveries to dealers whose annual purchases do not exceed 7500 gallons will be reduced to a maximum of four deliveries in any one calendar week.

2. Deliveries to dealers whose annual purchases are in excess of the above amount will be reduced to the lowest possible number of deliveries consistent with the location of the dealer and the amount of equipment available for storage purposes. In any case, however, such deliveries will not exceed seven in any one calendar week.

In addition, deliveries to hospitals and to the armed forces, and others exempted from the provisions of the plan, will be reduced "to the lowest number of deliveries in any one week sufficient to meet the requirements of such purchasers."

The plan substantially will lengthen the life of retail delivery equipment of the manufacturers participating, the ODT said, through more efficient loading and utilization of vehicle equipment, as well as by reducing delivery truck mileage.

In announcing approval of the plan, the ODT pointed out that prior permission of the ODT is not any longer required to put joint action plans by private carriers into effect. Under a recent amendment to General Order ODT No. 17, private carriers may now put joint action plans into effect as soon as they are agreed upon and are only required to file a copy of the plan with the ODT for purposes of record.

If, however, the carriers have any doubts as to the legality of their plan under existing Federal anti-trust statutes, they may still submit it to the ODT, who in turn clears it with the Department of Justice for review with respect to possible violation.

Joint action plans are an excellent method for complying with ODT mileage reduction and truck conservation orders, the ODT pointed out, and all carriers will be given every possible encouragement and assistance in working up plans and putting them into effect.



WPB NEWS

Truck Replacement Parts Production Quotas Raised

The value of sales for the average calendar quarter of 1941 was set up as the basis for all extensions of L-158, governing the production of spare parts of automotive equipment, under Limitation Order L-158 as amended and extended Dec. 12 by the WPB Director General for Operations.

The L-158 order previously fixed production limitations by using as the base period the value of sales for the "corresponding calendar quarter of 1941."

L-158 formerly gave the producer of automotive replacement parts the choice of producing according to either of two schedules, depending upon his inventory conditions. Where the lower of the alternatives applies, the amended order raises production quotas for truck parts from 75 per cent to 100 per cent of the base period.

Truck Tire Chain Production Permitted in Limited Amount

Production of a limited amount of complete tire chains for commercial vehicles is permitted by Limitation Order L-201 as amended today by the Director General for Operations.

The revision removes the general prohibition; it provides the manufacturers of tire chains and tire chain parts for commercial vehicles with the same amount of material permitted under the original order, but allows them to use 25 per cent of this amount in the manufacture of new chains.

300 Semi-Trailer Tanks to Be Built for Oil Hauling

The manufacture of 300 semi-trailer petroleum tanks to help relieve the oil shortage in eastern states, has been provided for in Supplementary Limitation Order L-1-g as amended, issued Dec. 11, 1942, by the WPB Director General for Operations.

Each semi-trailer to be manufactured will hold about 4000 gallons, and transport more oil per pound of steel and rubber and require less manpower than any other type of vehicle available for general use.

Officials of the Automotive Division and transportation experts agree that the use of these 300 trailer tanks for short hauling in the Middle West will release about 1500 railroad tank cars for the long haul to the eastern seaboard.

The present amended order supersedes the provisions in L-1-g which prohibited the production of truck trailers and semi-trailers. It permits the manufacture of the 300 tank trailers in such quantities, of

such types and within such periods of time as may be authorized by the Director General.

The completed tank trailers will be distributed in accordance with the provisions of Conservation Order M-100, in so far as they apply to L-1-g.

Welding Rod Procurement Procedure Changed

The limited control of the distribution of welding rods and electrodes effected by General Limitation Order L-146 has been abandoned on the issuance of a revocation of L-146.

When intended purchasers of welding rods and electrodes for maintenance and repair work find it necessary to obtain preference ratings, applications for purchases of less than \$50 should be addressed to local offices of the WPB. Where more than \$50 worth of material is wanted, the applicant should obtain approval from the WPB Director General for Operations in Washington.

Jeffers Asks Clean Up of Roads to Help in Tire Conservation

Rubber Director William M. Jeffers asked the American people to act as 130 million "committees of one" to rid the nation's streets, alleys and highways of broken glass, nails and other tire hazards.

"This is a campaign that needs no slogans, insignia or regulations," he said, "but only a little effort on the part of everybody."

"Broken glass, nails, loose rocks, and the like, cause much tire destruction. They can easily be removed if all of us do a little. We can retread a worn tire, but one that has been badly cut or bruised is a lost national asset."

Mr. Jeffers stressed the need for special activity by operators of parking lots and those who live or work on unpaved side roads and lanes, including contractors engaged in building projects.

Many cars and trucks that are driven carefully on streets and highways suffer a high rate of tire damage on a small stretch of lane or temporary road, he said. Rocks, chuck holes, bridge approaches and other similar obstacles are responsible for a great deal of tire damage.

94,372 Commercial Vehicles Rationed Up to Dec. 12, 1942

Since the rationing program became effective March 9, 1942, a total of 94,372 vehicles of all types has been released up to Dec. 12, 1942. The total includes 21,531 light, 49,873 medium and 11,418 heavy trucks, 6,689 trailers, and 4,861 miscellaneous vehicles.



OPA Authorizes Gas Rations to Counteract CWN Inequities

To meet the immediate mileage requirements of farmers and other commercial motor vehicle operators whose ODT Certificates of War Necessity do not provide for as much gasoline as the operators deem necessary for essential operations, the OPA, at the request of ODT, instructed its War Price and Rationing Boards to issue temporary transport rations to such operators sufficient to take care of their needs between Dec. 1 and Jan. 31. In such cases, temporary transport rations will be issued by the boards on the basis of the operator's own estimate of his minimum mileage needs, instead of on the gallonage stated on the ODT War Certificate.

War Price and Rationing Boards are being urged to limit these gasoline allowances to the applicant's minimum requirements, judging each case on the basis of their knowledge of local conditions and mileage requirements of the applicant.

All rations issued under the temporary arrangements will be deducted from the operator's allotment granted by the ODT in the Certificate of War Necessity for the first period, beginning Nov. 22, 1942, and ending March 31, 1943. OPA boards are asked to notify each applicant who claims an insufficient ODT ration to take an immediate appeal to his ODT district office, if he has not already done so. If the applicant is a farmer, he will be referred to the Farm Transportation Committee of his County United States Department of Agriculture War Board for assistance in making the appeal.

OPA also authorized the issuance of temporary transport rations for commercial motor vehicles where ODT Certificates of War Necessity have been applied for but not received or where Certificates showed obvious clerical errors.

OPA Petitions ICC to Cancel Railroads 10% Rate Increase

Cancellation of rate increases granted rail carriers early this year is sought by the Office of Price Administration in a petition filed with the Interstate Commerce Commission.

At stake are an estimated five hundred million dollars in yearly transportation costs closely related to the cost of living.

The petition was filed Dec. 4 by Price Administrator Leon Henderson, acting for

himself and on behalf of James F. Byrnes, Director of Economic Stabilization.

It urges discontinuance of the rate increases on the ground that (1) rail earnings have improved to the point where satisfactory profit positions can be maintained without the aid of the increases and (2) the increases jeopardize the anti-inflation program by imposing unnecessary costs upon the users of railroads and by adding substantially to the cost of the war.

Ceiling Prices Set For Car Tires Made of Reclaim

Retail and wholesale ceiling prices for new passenger car tires of reclaimed rubber being produced under War Production Board restrictions were announced today by the Office of Price Administration.

The maximum retail level for a size 6.00 x 16 tire of this kind has been set at \$13.25. Ceilings for all other sizes of casings being manufactured from reclaimed rubber are:

Size:	Maximum retail price
7.00-15	\$17.80
6.00-16	13.25
6.25/6.50-16	16.65
7.00-16	18.25
5.25/5.50-17	12.20
5.25/5.50-18	11.10
4.75/5.00-19	9.95
4.50/4.75/5.00-20	11.05
4.40/4.50-21	9.90
30 x 3 1/2	8.45

Manufacturers and private brands distributors of reclaimed rubber tires are required on and after Dec. 1, 1942, to attach to each casing a label showing the maximum retail price and indicating that it is a Grade III tire for rationing purposes.

All prices, wholesale and retail, are subject to revision later if production experience, which at present is limited, shows changes are necessary.

Tires of reclaimed rubber are the only kind now being manufactured for passenger cars. They may be sold only to persons who obtain certificates from their War Price and Rationing Boards. The ceiling of \$13.25 for a 6.00 x 16 tire of reclaimed rubber is about 22 per cent below the ceiling of \$17.11 for a first-line tire of the same size.

OPA Permits United Parcel Service to Increase Charges

United Parcel Service Companies in ten leading metropolitan areas which perform all delivery services for more than 1000 department stores and specialty shops were granted price adjustment by the Office of Price Administration. The adjustment will not affect retail prices.

Under the order, each of the 10 companies will be allowed to charge the department stores for which it makes deliveries the highest charges under any contract it had in effect during March, 1942. Since contracts with individual stores varied widely, this provision is equivalent to specific price increases for the companies, OPA pointed out.

The order also provides that in the case of specialty shops, where charges are made on a flat rate per package basis, the companies may add a percentage increase equivalent to the increase which would be applicable to the department stores.

The companies suffered hardship, OPA pointed out, principally because the volume of deliveries has dropped off sharply in recent months due to "Carry Your Own Package" campaigns. In general the decline has been in small packages only, leaving the delivery service to handle larger packages which must be delivered.

OPA said the drop in deliveries ranges from 31 per cent in Philadelphia to 50 per cent in San Francisco.

It was further pointed out that the services supplied by the companies tend to aid the conservation of tires and gasoline because in each of the areas affected, the United Parcel companies serve nearly all of the large department stores and by unifying the delivery service reduce the number of trucks on the street and increase the load of each truck.

Companies affected by the order are located in New York, Philadelphia, Boston, Chicago, Los Angeles, San Francisco, Cincinnati, Milwaukee, Portland (Oregon) and Seattle. All are owned and operated by United Parcel Service of America, Inc.

Extra Gasoline Rations for "Essential" Traveling Salesmen

The OPA on Dec. 5 announced a modification of its mileage rationing regulations, at the request of Rubber Director William M. Jeffers, to grant additional gasoline rations to traveling salesmen. The change in the mileage rationing regulations will give these salesmen up to 65 per cent of their last year's mileage, or a total of 8,600 miles a year, whichever is less. Representatives of traveling salesmen's groups agreed that this mileage is sufficient for essential salesmen's travel.

Salesmen, who will become eligible for more than 470 occupational miles a month, will be limited to those engaged fulltime in the sale of necessary productive equipment for farms, factories, mines, oil wells, lumber camps and similar productive or extractive establishments, or of essential food, shelter, fuel, clothing and medical supplies. Driving in connection with the

(TURN TO PAGE 152, PLEASE)

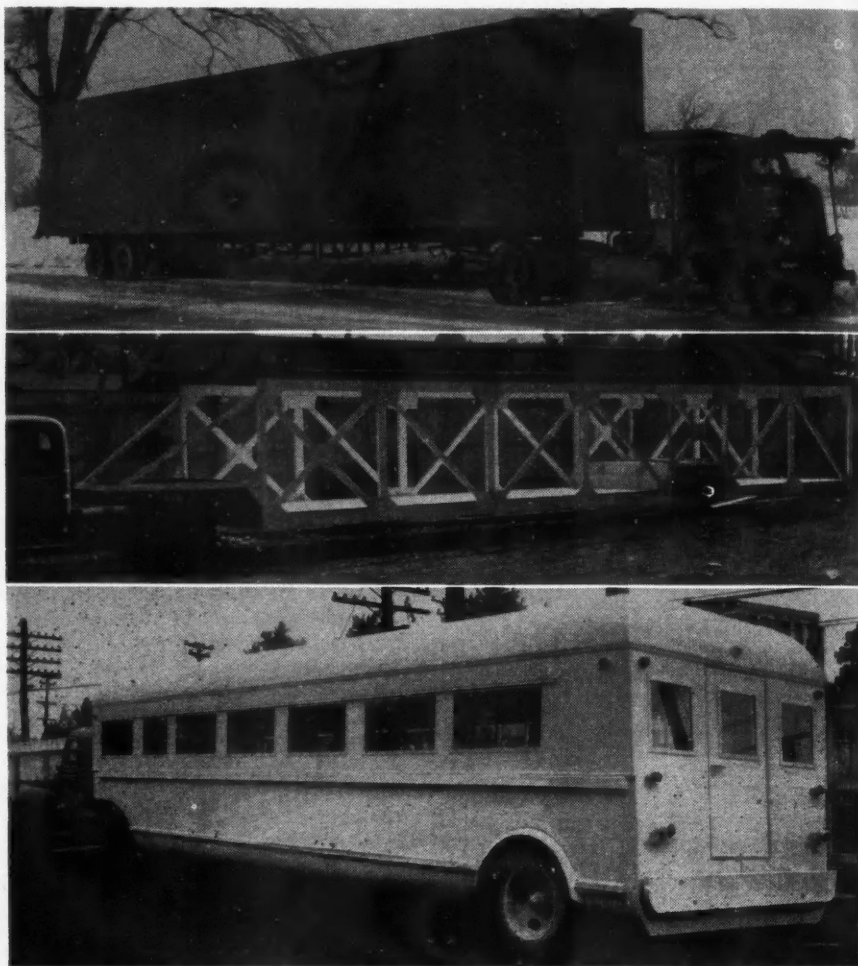
SCHULT TRAILERS

In line with the wishes of the ODT in building bodies and trailers with a minimum amount of critical materials, the Schult Trailers, Inc., of Elkhart, Ind., has devoted its facilities to building bodies and trailers such as illustrated here. The company is equipped to build any type of body or trailer that may be required in the transportation field, using non-critical materials.

Previous to the war the company's plants had been equipped to work primarily with wood, reinforced where advisable by steel. Because of this, the plant facilities were readily adaptable to any kind of trailer or bus body work using a minimum of critical materials.

Another important undertaking has been the conversion of existing transport equipment which would otherwise lay idle for the duration. The large bus body illustrated at right, which is being used for the transportation of war workers, was built by converting an automobile highway transport trailer. The automobile carrier, however, has been in no way damaged, and immediately upon the resumption of automobile production it can easily be converted for the purpose of transporting cars again.

Schult is also building a number of trailers for hauling ambulance bodies. (Center illustration at right.) These trailers use a minimum amount of critical materials, yet embody sturdiness and light weight.



Illustrated above, top to bottom are: Airplane wing-carrying trailer, 55 ft. long, 9 ft. wide and 10 ft. high inside; ambulance bed-hauling trailer, 60 ft. long and 8 ft. wide; car-carrying trailer converted to 100-passenger bus, 50 seated and 50 standees

Illustrated at top right is a trailer built to be used in hauling wings for airplanes. Many such trailers are being used by leading airplane manufacturers. They are built primarily from non-critical materials.

Schult is also building a number

of freight-handling trailers, medical and dental clinic trailers, laboratory trailers, horse trailers and trailers for transportation of disassembled troop transport gliders. These, of course, are being built for government use or for transportation of workers.

QUIZ ANSWERS

(Questions on page 28)

1. d. The Certificate of War Necessity requires that a commercial motor vehicle be inspected once every 60 days or every 5000 miles, whichever occurs sooner. The first inspection must be completed before Jan. 15.

2. b. More than 22 per cent of the trucks in use at the end of 1941 were past the seven-year mark, as compared with 28 per cent of all passenger cars. And a reminder—as motor trucks grow older they require more service to keep them running efficiently.

3. b. PD-IX. By requesting supplies on this form distributors and jobbers are able to replenish their stocks, even though sales were made with no priority rating at all.

4. b. The construction of an 857-mile oil pipe line from Southern Illinois to the

East Coast has already started. It will cost \$60,000,000 and will deliver 300,000 barrels of crude oil daily beginning about June 1.

5. b. The committee recommended nationwide gasoline rationing and slower driving, but it also declared unequivocally for sufficient rubber for essential needs.

6. a. 1 to 6. There are approximately 4,890,000 non-military trucks still in service as against 29,000,000 passenger cars.

7. d. Automobile mechanics. The War Manpower Commission has also agreed to stop trying to divert mechanics from automotive shops into plants of the manufacturing industries.

8. b. The International Brotherhood of Teamsters. The purpose of the committee is to enlist the cooperation of employees, management, and their organizations for the furtherance of the war effort.

9. c. T-rations, or Transport rations. The allotment is made in accordance with the

gallonage approved on the operator's Certificate of War Necessity.

10. d. The staggering sum of 15 billion dollars. This includes 396 plants owned by 133 companies—7 major automobile manufacturers, 11 truck firms, and 115 parts producers—and their products range from spark plugs to amphibian tanks, from ball bearings to four-motored bombers.

Metallizing Contest Winners

Winners of the contest sponsored by Metallizing Engineering, Inc., and announced in the September, 1942, issue of COMMERCIAL CAR JOURNAL, are: Top prize, \$250 War Bond, W. A. Duvall, The Greyhound Corp., Chicago; Second prize, \$150 War Bond, Jos S. Pluméau, Department of Sanitation, New York City; third prize, \$100 War Bond, W. B. Meyer, John Nooter Boiler Works Co., St. Louis, Mo.; a \$50 War Bond also was made to R. H. Forney, New Castle, Pa.



Here's part of The Zakas Bakery's 21-truck fleet. 100% Exide-equipped, they give unfailing service to the people of Atlanta—and each battery averages two years of life.



"Our experience has proven that Exides meet all requirements"

BREAD, today, is a vital health armament. We all need it, and when these trucks of The Zakas Bakery start out, there's definite assurance that they'll deliver the bread to the people of Atlanta. There's no secret to this success story. The Zakas Bakery has always followed a *Buy to Last—Save to Win* policy.

"It is essential," writes Mr. Marinos of The Zakas Bakery, "that we use batteries upon which we can depend for quick starting in all kinds of weather, long mileage and a minimum of maintenance. Our experience has proven that Exides meet all these requirements and for this reason our fleet is equipped 100% with these batteries."

Mr. Marinos' letter is one more to add to a long file in praise of Exide Heavy Duty Batteries. The way they *last*, and the way they *perform*, is helping to Keep America Rolling.



Exide
EXTRA-DUTY
BATTERIES



THE ELECTRIC STORAGE BATTERY CO., Philadelphia
The World's Largest Manufacturers of Storage Batteries for Every Purpose
Exide Batteries of Canada, Limited, Toronto

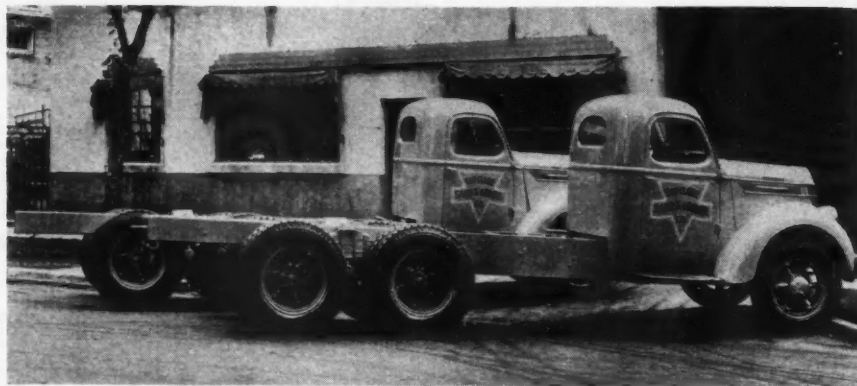


MORE ABOUT CONVERSIONS

Interest continues in converting trucks of small capacities to larger capacities for greater payloads. Last month an article entitled "Conserving with Conversions" discussed the numerous advantages of increasing capacities by means of third axle conversions. Several before and after examples were shown to indicate what some fleet operators were doing. Questions following the publication of this article indicate our inadvertent omission of the following facts concerning Fig. 1: This is a standard 1½-ton Chevrolet chassis. Clearance and marker lights were removed but running boards are the same; paint job makes it look different. Conversion was made by Truckstell with Thornton Tandem units.

Additional examples of what other fleet operators have done with third axle conversions are shown in the accompanying illustrations.

The small illustration above shows one of two 1938 Internationals of 12,000 lb. gross rating before conversion. To the right, the same vehicles after a Truckstell-Thornton conversion increased the ratings to 30,000 lb.—well over 100 per cent. The engines in the conversions are the same. The principal changes included rebuilding of the clutches, transmissions and front axles. Frames were reinforced with full length



channels, extra cross members and fish plates. Wheels were extended to provide proper C-A dimension for mounting 3½-cu.yd. concrete mixer.

The larger illustration shows another Truckstell conversion of a truck to a tractor for semi-trailer operation. This is a Ford, Buda-powered, and the Thornton Tandem drive was used for the rear axles. The payload capacity of this conversion is

6200 board feet, well over double the original capacity.

While these conversions represent the successful rebuilding of old trucks, fleet operators should not lose sight of the fact that if they are able to secure new vehicles, but of smaller capacity than required, a good plan would be to take what is available and have the payload increased by conversion.

Mechanic Problem at Critical Stage; Government Help Sought

The number of automobile repair mechanics left in the nation's garages and repair shops is approaching about the minimum which will be needed to maintain war essential truck and passenger car transportation, Otto S. Beyer, ODT Director of Transport Personnel, reported on Dec. 12.

This conclusion was based upon material presented by the Automotive Manpower Committee of the ODT. Figures were introduced which showed that the number of mechanics employed by dealers of one of the largest truck and passenger car manufacturers, as of Nov. 27, 1942, has declined to 55 per cent of the January, 1942, level. The survey covered only dealers in the gasoline-rationed East.

Mechanics left automotive repair shops principally to enter war plants and the armed services, the report said.

The committee recommended that this problem be met by educational programs designed to convince the mechanics of the importance of their work to the war effort, and by increased cooperation with the local United States Employment Service offices. The ODT also agreed to issue a bulletin, for distribution in the industry, on the services and duties of the U. S. Employment Service.

A similar bulletin will be issued on the rights and privileges of maintenance employers under Selective Service Regulations.

The committee also recommended that an intensive training campaign be developed to expedite replacement of mechanics who may leave in the future.

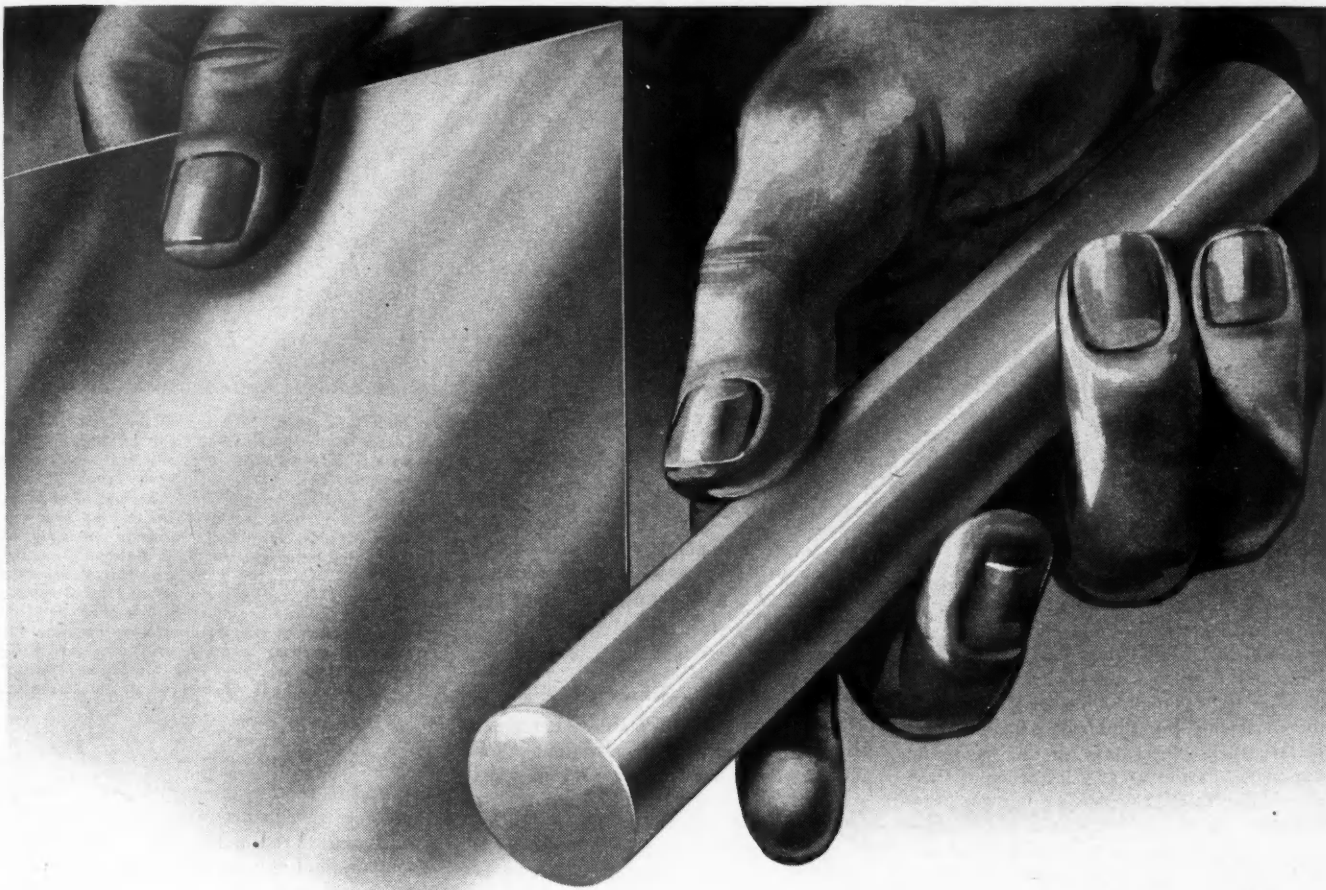
The six committee members present were: J. F. Page, of the Packard Motor Car Company; Joseph Little, of General Motors Truck; V. E. Doonan, of Ford; Joseph Middlebrook, Jr., automobile dealer of Pittsburgh, Pa.; Waverly G.

King, dealer of Richmond, Va.; and M. A. Anderson, dealer of Baltimore, Md.

"Circuitous Route" in ODT No. 3 Includes Participating Carriers

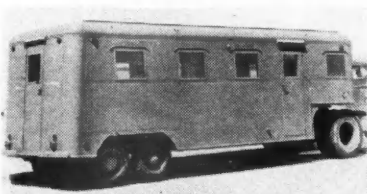
A provision of General Order ODT No. 3, prohibiting a common motor carrier from accepting a shipment of property for transportation over a "circuitous route," applies not only to the originating carrier but also to any subsequent or connecting motor carrier if his route over which the shipment is to move is circuitous, Jack Garrett Scott, General Counsel of ODT, made clear in an interpretation issued Dec. 2.

A "circuitous route" is defined in the order as any highway route or routes or combination thereof, the mileage of which exceeds the mileage of the most direct highway route by ten (10) per cent or more. Exception is provided when no adequate common carrier service over a direct route is available."



HOW STRONG IS LINDSAY STRUCTURE?

TYPICAL COMBAT BODIES
made of Lindsay Structure



Mobile Command Post



Small Combat Trailer



Meteorological Station

ANSWER: A 36" sheet of 24-gauge steel under uniform tension possesses greater tensile strength than a 1" steel rod!

Here is the basic fundamental of Lindsay Structure—the method of holding light gauge steel sheets under uniform tensioning to utilize all their strength.

IDEAL FOR COMBAT BODIES

The high strength-weight ratio of a Lindsay Structure assembly conserves steel—reduces weight—makes lighter, faster combat bodies capable of standing tremendous punishment in any kind of weather or climate.

Furthermore, the matter of repairing vehicles damaged in action can be done with little loss of time, often in the field away from a service base—skilled workmen or mechanics are not required—no riveting—no special welding tools are needed.

These are the reasons why Allied armies use many Lindsay Structure combat bodies—mobile workshops, command posts, ambulances, store and dental shop units, meteorological stations, and other units of modern war.

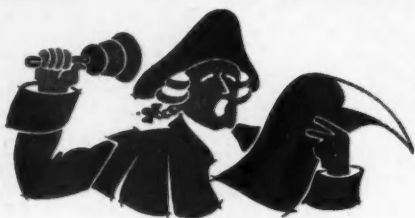
Investigate the scientific Lindsay Structure method. For information write Lindsay Structure Division, 222 North Bank Drive, Chicago, Ill.; or 60 E. 42nd St., New York, N.Y.

LINDSAY STRUCTURE

U. S. Patents 2017629, 2263510, 2263511
U. S. and Foreign Patents Pending

LINDSAY STRUCTURE CAN SAVE THOUSANDS OF TONS OF STEEL PER MONTH

NEWSCAST



Private Truck Owners Council's Annual Meeting Jan. 19 and 20

The fourth annual meeting of the National Council of Private Motor Truck Owners, Inc., will be held at Hotel Pennsylvania, New York City, on Jan. 19 and 20. Because the sessions will be devoted largely to a series of round-table discussions of the most pressing problems affecting the private truck owners, this meeting has been designated as the "War Conference of Private Motor Truck Owners."

Topics on the program will deal with certificates of war necessity—what happens after Jan. 31; eligibility for tire rationing and future tire rationing developments; status of ODT 17; future developments of the manpower situation; war-time maintenance and availability of parts and supplies, and state legislative trends.

Present at these sessions will be executives of the various war and government agencies involved.

National Synthetic Rubber Corp. to Operate Government Plant

The Rubber Reserve Company had made a contract with the National Synthetic Rubber Corporation to operate a new government-owned synthetic rubber plant to be built in Kentucky by the Defense Plant Corporation, a subsidiary of Reconstruction Finance Corporation. It is expected that the plant may be completed about June, 1943.

The five independent companies which participate in the ownership of National Synthetic Rubber Corp. are: Goodall Rubber, Inc., and Hamilton Rubber Mfg. Co., both of Trenton, N. J.; Hewitt Rubber Corp., of Buffalo, N. Y.; Lee Rubber & Tire Corp., of Conshohocken, Pa., and Minnesota Mining & Mfg. Co., of St. Paul, Minn.

Metallizing Co. Offers New Service

The Metallizing Company of America announces the establishment of a new engineering service program designed to assist industry on all problems relating to salvage, conservation of materials, and the use of substitute metals for the more critical ones.

L. E. Kunkler, president of Metallizing Company of America stated, in announc-

ing this plan, "Our consulting service engineers are available to everyone engaged in war work, in addition to the regular service they are rendering present users of the metallizing process."

Speed Law Being Observed

Speed studies in 15 states since the institution of a national 35-mile-an-hour limit show that the average speed of passenger cars on rural highways has been reduced to 37 miles per hour and that of trucks to 36 miles per hour, the Public Roads Administration of the Federal Works Agency announced.

Major General Philip B. Fleming, Federal Works Administrator, expressed satisfaction with the public response to the new war speed limit. "I am especially pleased," he said, "because these low averages are largely the result of voluntary, patriotic compliance with drastically reduced speed limits. Very few states were yet in a position to enforce the 35-mile limit at the time these speed studies were made. Enforcement activities are rapidly increasing, however, with the new limit already enacted into law in some states."



John L. Rogers, Director of the Office of Defense Transportation's Division of Motor Transport, was presented with the first copy of a new booklet, "How To Save Truck Tires," just published by the U. S. Rubber Company. Mr. Rogers, seated, is shown looking over the booklet with John Boll, formerly manager of truck tire sales for the U. S. Rubber Company and now associated with the War Production Board. This booklet was offered to Commercial Car Journal readers in the Free Publications Section of the October issue on page 40. Readers desiring a copy, still can get it by writing L40 on the free postcard located between pages 42 and 43 of this issue

Auto-Lite Battery Succeeds USL

Papers recently filed with the Secretary of State at Albany, New York, record the changing of the name of the USL Battery Corporation of Niagara Falls, New York, to Auto-Lite Battery Corporation.

The company, a leading manufacturer of automobile storage batteries since the beginning of the industry, has long been a subsidiary of The Electric Auto-Lite Company of Toledo, Ohio. The change in name involves no change in the status of the Auto-Lite Battery Corporation and The Electric Auto-Lite Company. It identifies the corporation with its product "Auto-Lite Batteries" and the diversified line of Auto-Lite brand products manufactured by the parent company.

(TURN TO PAGE 156, PLEASE)



"Taking over" the program at the close of a noontime ceremony at which the United States Treasury department awarded a citation and the Minute-Man flag to the Diamond T Motor Car Co., Chicago, the employees staged a special presentation ceremony of their own. In a voluntary and spontaneous expression of their friendship and esteem, and in recognition of his 38 years of continuous leadership unmarred by labor strife or serious dispute, the

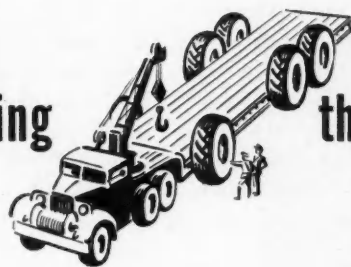
members of the Automotive Workers' Industrial Union presented C. A. Tilt, president of the Diamond T company with a golden memorial trophy and with a special diamond-studded Army-Navy "E" award pin. The union also presented the other veteran executives of the company, Vice Presidents E. J. Bush, S. A. Cook, C. A. Peirce and T. C. Huxley, and Harry C. Emberson, director of purchases, with gold Army-Navy "E" award pins.

Everywhere

the army the navy the marines are located you will



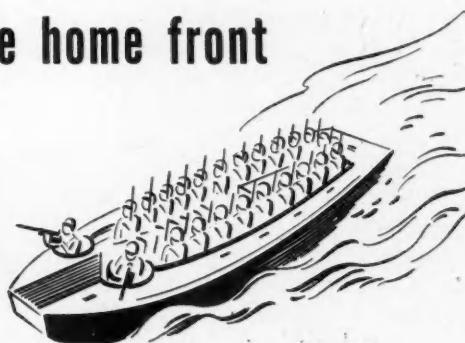
find MIDLAND Power Units doing their part



Allied forces all over the world today are relying on

MIDLAND DEPENDABILITY.  On the home front

MIDLAND Units are still serving the



Nation's largest  truck transportation systems

"Those who know power control units choose Midland"



MIDLAND *(Christensen)*

POWER
CONTROL
UNITS

THE MIDLAND STEEL PRODUCTS COMPANY • CLEVELAND, OHIO



TIRE INSPECTION REMINDERS

(CONTINUED FROM PAGE 47)

inspector is a service station operator, garage man or tire dealer who ordinarily does business with the vehicle owner.

The ceiling set by Maximum Price Regulation No. 165 applies when the inspection does not require removal of any of the tires. The top fee an inspector may charge in such cases is the highest charge he made for the same, or a similar service in March, 1942. Where it is necessary to demount a casing in the course of inspection, the charge for this additional service is limited by a schedule of prices contained in OPA's tire rationing regulations: For demounting and remounting passenger-type tires (even though mounted on a commercial vehicle) 50 cents each; for truck tires 7.50 x 20 or smaller, 75 cents each; truck tires larger than 7.50 x 20, \$1.00 each; additional charge for inside dual truck tire of this larger size, 50 cents.

If an inspector (fleet-employed or independent) finds that a tire needs repairing to insure maximum service, he must withhold endorsement of the Certificate of War Necessity or record form covering operations of the vehicle on which the tire is mounted until the repairing has been done.

If an inspector finds any mechanical condition causing undue tire wear, he likewise must recommend the necessary repairs and must not sign the Certificate or record form until they have been made.

Without removing tires, the inspector must check for:

1. Correct air pressure in tires.
2. Bent rims and out-of-true wheels.
3. Cuts or breaks in treads or sidewalls.
4. Evidences of wear from badly aligned wheels, faulty breaks, unbalanced wheels, camber malalignment and excessive wear of kingpins, bushings and wheel bearings.

Since in all but a few cases the tire rationing regulations provide for replacement tires only when the casing on the vehicle is not recappable, independent inspectors are given instructions to guide them in deciding when to recommend recapping and

when replacement. Fleet-employed inspectors will find these a useful guide.

The most economical point for recapping either a passenger car or truck tire, according to the instructions, is when the casing is worn smooth approximately three-fourths of the total width of the tread and not beyond the point where there still remains an eighth of an inch of tread rubber above the "breaker strips" or outside ply of cord. The ultimate point of wear for a passenger car tire if it is to be recapped is through one body ply of cord fabric, while for truck tires, which are of heavier construction, it is through two plies.

A damaged tire is recappable when it does not require more than two sectional repairs of breaks or cuts in the cord. When the lesions are more than three inches long, however, or are below the point where the sidewall of the tire contacts the top of the rim flange, the casing cannot be recapped satisfactorily. Besides wear beyond the ultimate points designated, and cuts and breaks more extensive than those described as repairable, there are four other kinds of damage that make tires unfit for recapping: (1) Ply separation; (2) broken or exposed bead wires; (3) failure at the bead reinforcement; (4) separation of cord in inside ply.

Since local War Price and Rationing Boards are authorized to deny recaps or replacements to operators who abuse tires, fleet operators should note that the independent inspectors are required to report to the board when they find tires worn past the recapping point, or showing tread or ply separation caused by underinflation, overloading, or high speeds.

END

(Please resume your reading on P. 48)

TWO YEARS OF TURNPIKE OPERATION

(CONTINUED FROM PAGE 45)

ford to buy tickets to use a super-highway like the Turnpike they can afford to pay higher taxes to build state highways that provide approximately the same time-saving and equipment-conserving facilities? This is a question that only time will pose and truck operators will have to think

of a convincing answer to counteract the embarrassing statistics.

Surprisingly enough, although total revenue is falling off because of the effect of gasoline rationing on passenger car traffic, the two years of Turnpike operation, when considered separately and together, offer some warm comfort to the advocates of toll-charging superhighways. Consider these facts:

In the second year of operation actual truck traffic exceeded by 10 per cent the advance engineering predictions, which forecast annual truck traffic of 289,900. Actual truck revenue was a bit less than 8 per cent under the predicted revenue of \$1,380,000.

Passenger car traffic, in the second year of operation, exceeded by 33 per cent the predicted traffic of 1,010,100, but revenue fell short by approximately 30 per cent of the \$1,290,000 prediction.

However, if we take the best passenger car year (which was the first year) and the best truck year (which was the second) we will find that together they exceed the total annual traffic prediction by 96 per cent and the total revenue prediction by 17 per cent.

This is sheer statistical sleight-of-hand but those who oppose toll roads in principle must keep their eyes on it.

END

(Please resume your reading on P. 46)

35-Mile Speed Limit Reminder

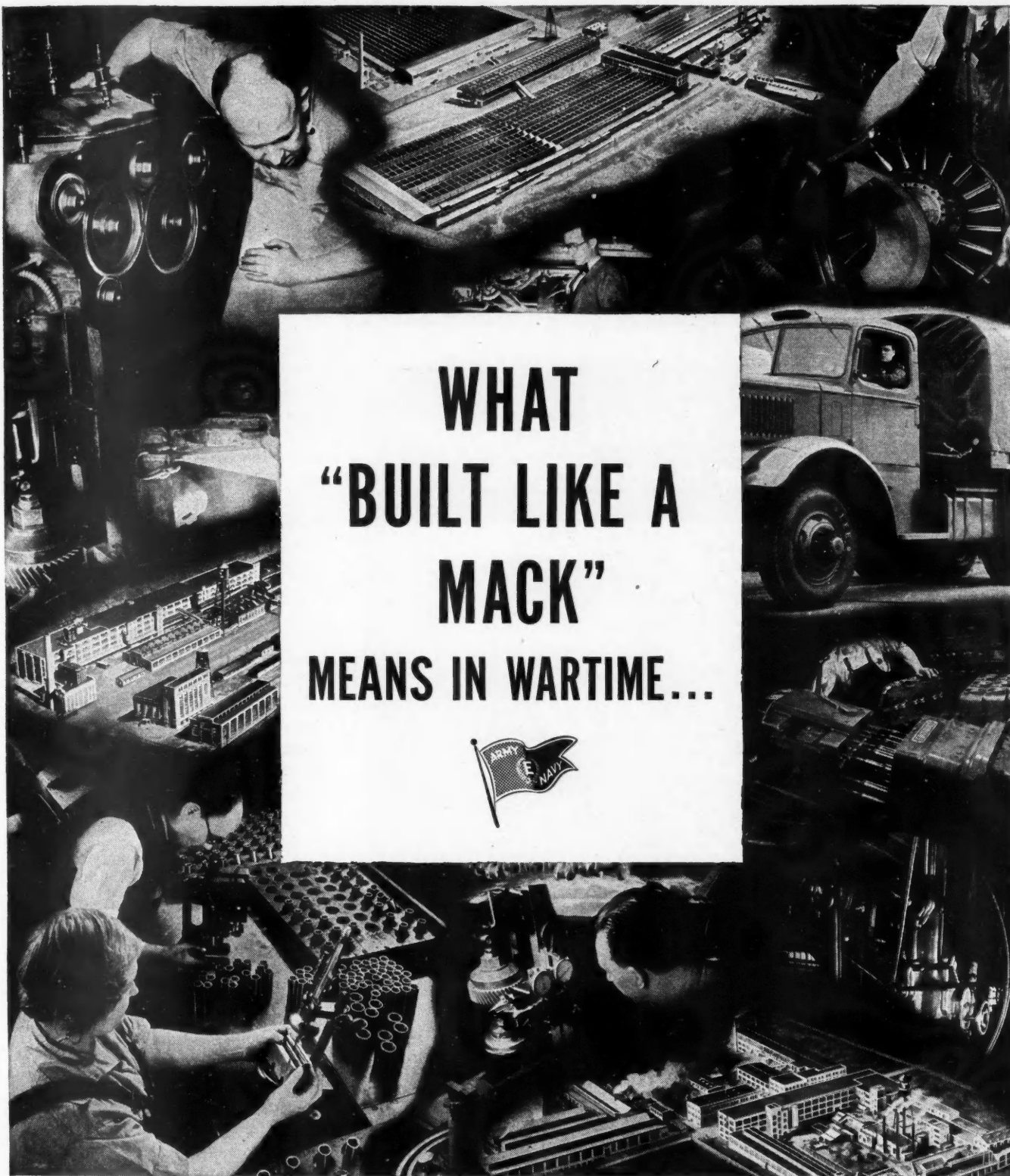
In order to remind its truck drivers of the national 35-mile speed limit, the Newark *Evening News* printed warning stickers which were pasted on the speedometer of each vehicle.

The principal wording on the sticker is "Victory Limit" of which the V, which is much larger than the other letters, was cut out so that, when pasted over the speedometer, it focuses attention and limits visibility of the pointer to, but not beyond, the figure 35 or, on some speedometers, where that figure should be.

Instructions to the drivers were that when the pointer disappears from view they are exceeding the national speed limit, excessively wearing down the tires, wasting rubber and breaking the law.

Frisco C.C. Elects Ernest Ingold

Ernest Ingold, one of the largest individual automobile dealers in the country (handling Chevrolet), was elected president of the San Francisco Chamber of Commerce and took office Jan. 1.



WHAT "BUILT LIKE A MACK" MEANS IN WARTIME...



Mack

TRUCKS

ONE TON TO FORTY-FIVE
TONS, BUSES, FIRE APPARA-
TUS, AND MARINE ENGINES

BUY U. S. WAR BONDS

WHEN we received our wartime assignment... we didn't have to start all over in our manufacturing methods to meet Army and Navy specifications.

Our manufacturing standards were already high enough to meet the most rigid Service requirements. Even if we had known before the war that the day would come when civilian trucks and buses would have to last far longer than

usual... we couldn't have built them any better. For 43 years every Mack has been built with the most precise care, the most skilled workmanship and of the highest quality materials.

We're proud of what our Macks are doing now. We know that now, more than ever before, operators realize what it means in longer life to have a truck or bus that's "Built like a Mack".

MACK TRUCKS, INC., LONG ISLAND CITY, N. Y.

A DAIRY'S SUPER-MILEAGE FORMULA

(CONTINUED FROM PAGE 44)

Our fleet contains vehicles of several capacities: 1/2-ton to 1 1/4-ton jobs for retail milk delivery, 2-ton trucks for wholesale milk and ice cream products. Our house-to-house routes average 35 miles; formerly daily deliveries, now reduced to every other day. Our wholesale units operate six days a week and from six

miles to 250 miles per day. They deliver ice cream and milk to our dealers in the city, north to Wabash, Ind., and south to the Ohio River; the latter area being very hilly country.

Here are the most important points of our tire maintenance program:

1. We mount recaps only on city operated trucks. This plan has paid excellent dividends.

Our records show that in the seven years we have been recapping our sound tire carcasses, many recaps

actually ran up more mileage than the original treads.

2. Mount new tires on country operated trucks. Careful tests and many experiments have proved that on longer hauls new tires operate with less danger of blow-outs due to over-heating. New carcasses, having had less mileage and less pounding, show better mileage records on country roads on the higher speed rates than average recapped tires. This does not mean that recapped tires will not serve well in country use, providing that recapped carcasses have no hidden weaknesses due to abuse or accidental injury.

3. Avoid over-loading. This rule is rigidly enforced. If territorial loads increase in weight or volume, we simply use larger trucks or use larger tires, in line with recommendations of the tire manufacturer.

4. Daily air pressure tests and proper inflation. This is an obvious necessity.

5. Use governors on all units. Prior to the recent 35-mile law, these were set to 40 miles per hour. The experience of many years in servicing our tires has proved to our complete satisfaction that tires wear and deteriorate faster with increased speed. Speed creates excess heat which contributes to excessive wear of rubber. Cool tires makes for longer wear.

6. Paint three white marks on outside of tires on the curb side to prevent curb rubbing. Sidewall scuffs are more easily detected by this means.

7. Have all tread cuts vulcanized. These spot jobs are inexpensive and prevent moisture from getting in to the carcasses. Large casing breaks or blow-outs are sectionized.

8. Check valve cores. We remove defective ones immediately. They cause under-inflation by the sneak process of slow leaks. Right here I want to emphasize the importance of having all valve stems fitted with good valve caps and keeping them screwed down tight. As a result of this extra precautionary service, we have obtained marked improvement in tire mileage and a higher percentage of recappable tires. We have fewer flats with consequent savings in time and expense from unnecessary road repairs.

In recent months, I have asked
(TURN TO PAGE 64, PLEASE)

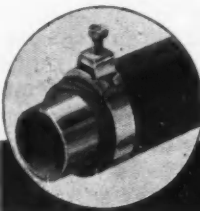
DIAMOND T Cargo Trucks and Half-Tracs for our country's fighting men



EQUIPPED WITH

WITTEK NOC-OUT HOSE CLAMPS

Speeding over the roughest ground, climbing steep embankments and traveling through the deepest sand and snow and muck, these modern military vehicles, manufactured by Diamond T Motor Car Company, are equipped with Wittek Noc-Out Hose Clamps.

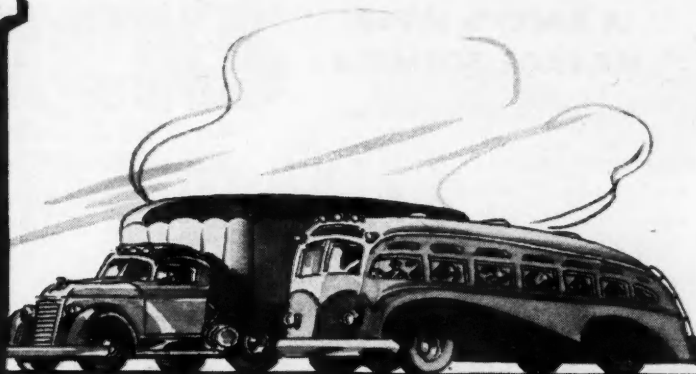


Identified with the automotive and trucking industries for more than 20 years, Wittek Noc-Out Hose Clamps have established and maintained a standard of quality that guarantees a uniform perfect seal on all hose connections for busses, tanks, trucks and tractors.

THE STANDARD OF THE INDUSTRY

WITTEK manufacturing co.
4305-15 WEST 24TH PLACE, CHICAGO, ILLINOIS





2000-5000 MILE INSPECTION AND MOTOR TUNE-UP SERVICE
(INSPECTION RECOMMENDED EVERY 2000-5000 MILES OR EVERY 30 DAYS)

Form B-1258-2500-2-41

NATIONAL PERIODIC INSPECTION PROGRAM
1000 MILE LUBRICATION AND INSPECTION SERVICE
(INSPECTION RECOMMENDED EVERY 1000 MILES OR EVERY 30 DAYS)

Unit No.

Mileage

Date

Check the following as worn or defective. If repairs needed mark "R.N." ("A.N.")

KEEP 'EM

LUBRICATION

On the Road • Out of the Shop

• Hundreds of trucking companies, bus operators, contractors, delivery companies... all have proved in actual experience the tremendous practical value of National SAVIT Service and the National Periodic Inspection program. Clean engines, increased gasoline mileage, longer life of hard-to-replace parts, better performance and fewer repairs result in a general conservation of man power.

National Periodic Inspection program is identical with the Preventive Maintenance Service recommended by the O. D. T.—and therefore a most valuable aid. Write today for free samples of these National Periodic Inspection service forms.

NATIONAL-IZE YOUR FLEET

NATIONAL EN-AR-CO MOTOR OILS and LUBRICANTS
NATIONAL WHITE ROSE GASOLINE

THE NATIONAL REFINING COMPANY • CLEVELAND, OHIO

Cleveland • Indianapolis • Chicago • Peoria • Omaha • Kansas City • Memphis

East of Ohio . . . The Globe Refining Company, Cleveland, Ohio

A DAIRY'S SUPER-MILEAGE FORMULA

(CONTINUED FROM PAGE 62)

many car owners and repair men what the basic use of a valve cap is. Their answers indicate the common belief and fallacy that valve caps are used only to keep out water and dust. Our findings are that valve caps, also called dust caps, do keep out water and dirt but their most important use is to prevent slow leaks.

A simple demonstration will prove this fact. Inflate a tube that has a faulty valve core in it, then screw a dust cap on tightly and the leak will stop. Tubes which are kept absolutely air tight will not lose pressure, but valve cores alone are not enough. To illustrate: a 2-ton truck traveling at 40 miles per hour hits a bump. This puts a terrific strain on the carcass and frequently unseats the valve core momentarily, allowing air to escape even when the core is new. A good valve cap will prevent this loss

of air pressure. It has a soft but tough rubber seat which prevents leaks from these road blows, if it is screwed on tightly.

Some months ago we put a night man on to check tires, keep them inflated and wash trucks. The first few nights he spent several hours on the tires, inflating and replacing lost valve caps and defective cores. After he got this extra job done he was able to do all the tire service in 50 per cent less time.

With good valve caps and cores, we have obtained better inflation averages. We know now that valve cap protection is necessary to conserve tires. We keep a box of new caps and cores on hand with instructions to replace faulty cores and keep valve caps on the stems.

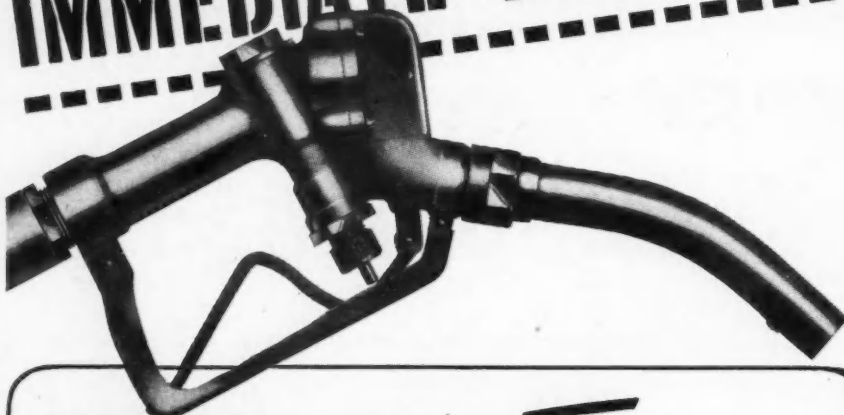
In addition to the obvious need of getting the maximum tire mileage from the original treads, the next most important thing is to get the highest percentage possible of casings that can be rebuilt. One factor that helps us stop waste of rubber and money is to determine a tire's recapping suitability here in the shop before turning it over to the recapper.

The simplest and most effective way is to use a sound detector. Every shop has one or more on hand—just an ordinary hammer. Dismount and deflate the tire. Then tap it around its entire circumference. When you hit a soft spot, there will be no rebound. Often a tire may look all right, but have some soft spots which can't be seen. The hammering process will show them up. We have found this very helpful in eliminating hidden injuries.

Under a similar method of rigid service, that first doubled and then trebled tire mileage for us in the last decade, we worked out a lubrication system that is producing corresponding results in motor-chassis life. For example, some of our 1932 models have 300,000 miles or more and are still going strong. We credit much of this performance to our method of engine lubrication. Of course, much credit must be given to the driving methods of our driver-salesmen.

Our management has dramatized the importance of proper engine lubrication by the following unusual illustration. "It requires the loss of only eight pounds of metal worn (TURN TO PAGE 66, PLEASE)

available for
IMMEDIATE DELIVERY



OPACO SAFETY-FILL NOZZLE

Patents Pending

SAVES } GAS TIME MONEY

by shutting off automatically when tank is filled

FLEET OPERATORS can now get "Safety-Fill" Nozzles. Prevent spilling and wasting of gasoline . . . speed up servicing by equipping your pumps with "Safety-Fill" Nozzles.

SHUTS OFF AUTOMATICALLY when gas in the tank reaches the tip of the nozzle. This eliminates overflowing and wasting gasoline.

REDUCES FIRE HAZARD — Gasoline spilled on or around a truck endangers equipment which can't be replaced. "Safety-Fills" avoid this danger.

Fill in - Tear out - Mail Today!

OPACO DIVISION,
AMERICAN MACHINE AND METALS, Inc.
East Moline, Illinois

Please send me FREE Bulletin and latest prices on OPACO Safety-Fill NOZZLES.

Name _____

Address _____

City _____ State _____

FASTER SERVICE — Gas tank can be filled at maximum speed. This is a big time saver during rush periods.

NO PEEK! NO LISTEN! NO GUESS!
Ideal for servicing at night and in noisy garages and terminals.

"Safety-Fill" Nozzles will soon pay for themselves. Fleet operators such as Borden Company, Yellow Cab, Checker Cab, A & P and N. J. Bell Telephone use "Safety-Fills." Write for FREE Bulletin and latest prices! Use convenient coupon at left.



OPACO

DIVISION

AMERICAN MACHINE AND METALS, INC.

EAST MOLINE, ILLINOIS

YOUR TRUCKS CAN'T RENDER PROPER SERVICE



UNLESS

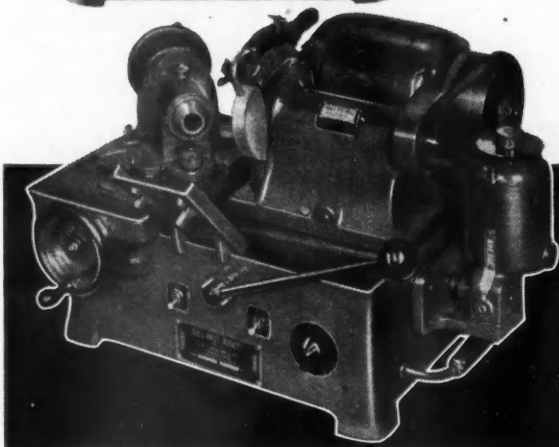
YOU SERVICE THEM PROPERLY



Left: Model EJ ECCENTRIC Valve Seat Grinder on Diamond Dresser Stand. Complete sets include pilots and grinding wheels for any and all jobs.



Below: Model 80A Wet Type Valve Refacer with dual motors, rheostat control and a dozen other exclusive features.



● Extra loads and extra hours of operation are putting demands upon your vehicles such as they have never had to withstand before.

Not only must you get a maximum of power from a minimum of fuel, but you must get that kind of performance for thousands of extra miles between valve overhauls and for periods far beyond what was once the normal life of these vehicles.

Only by servicing valves and valve seats with HALL Equipment to factory standards of precision and finish can you be sure of proper valve performance and correspondingly proper engine performance. That's why HALL valve servicing equipment so predominates in the shops of America's largest and most successful operators.

Complete information on the HALL Model EJ ECCENTRIC Valve Seat Grinder and Wet Type Valve Refacer pictured at left awaits your request.

Write for it today.

THE HALL MANUFACTURING CO., TOLEDO, OHIO, U.S.A.

HALL

A DAIRY'S SUPER-MILEAGE FORMULA

(CONTINUED FROM PAGE 64)

from the working parts of a 7,000 lb. truck to make it ready for the junk heap!"

Our management has done everything humanly possible to prevent premature breakdowns and undue wear, engendered by the lack of proper lubricants. Poor oil, too little of it and careless use of dirty oil soon

runs an expensive and finely engineered motor truck to the parts wreckers. As we have figured it from our experience and constant tests, practical lubrication doubles and trebles engine life—saves plenty of trouble besides.

We have used oil filters on all of our trucks for six years. We would not be without them. Our smaller trucks are equipped with standard size filters; oversize on the larger ones. Governors to control speed and filters to keep oil clean have reduced

our overhauling cost by 40 per cent since we began to use them.

Oil filters keep our oil clean; free from carbon and metal abrasives which wear out parts rapidly. Yet we do not believe that even this is enough. Contrary to the belief of some operators that oil does not wear out, our inspections and tests convince us that heat reduces the lubricating qualities of oil, in fact renders it unfit for hard use after certain mileage limits.

The leading test, and the most convincing one, is the obvious new life, faster pick-up and smoother operation of the engines after new oil is put in at the 2,500 or 3,000-mile point. Therefore, we change oil every 3,000 miles regardless of color. One other factor that convinces us that this procedure is right is the increased mileage between the overhauling jobs.

Another thing: we use 100 per cent Pennsylvania oil, with additives designed to clean as it lubricates. We change cartridges about every 8,000 miles. Many former tests indicate that this is the proper time to change them, after having accumulated the foreign matter from three oil changes.

We never use heavier oil than SAE 20 in summer, and 10 to 20 in the winter. We find that light oil, winter or summer, keeps rings cleaner, minimizes trouble and provides better lubrication. This, combined with the additives, keeps the rings from plugging up. A large percentage of excess oil consumption is caused by rings plugging up with carbon.

Under the plan described, we are getting better cohesion and a more lasting film of oil between working parts. Specifically we are, under this simple program, operating our large units 90,000 to 95,000 miles between general motor overhauling jobs. We have several units on which valves have not been replaced within 200,000 miles. While we have made progress in the same direction on our 1½- to 11¼-ton units, 35,000 is about the best that we have been able to do between overhauling jobs. We attribute this to the more frequent stops in city driving and the decreasing lubrication values in engines that run hot and cold so many hours of the day.

END

(Please resume your reading on P. 45)



**HEART
OF TIRE
CONSERVATION IS
BEAR
WHEEL ALINEMENT
AND BALANCING**

**Come to HEADQUARTERS
for Authoritative Information**

As a service to you and a contribution to the O. D. T. Program to Save Tires and Parts, we are making available to all transport operators, without charge or obligation, a copy of the 24-page Bear Manual on Wheel Alinement and Dynamic Balancing. Every transport operator should read this manual for complete understanding of what wheel alinement is and what it does; how to check wheel alinement; what to do and not to do; how to check steering gear and wheel balancing; how to find out what is wrong by inspection of tires, or by such symptoms as front wheel shimmy, excessive play in steering system, etc.

for Expert Advice

Send all your questions about tire conservation to us. As pioneers in wheel alinement and balancing we can show you how to get the most out of tires.

**for Names of Nearest
Bear Service Stations**

No job of alinement and balancing can be better than the precision of the machine on which it is done. Insist on Bear Precision. Look for the Bear Sign or write to us for names of Bear Service Stations near you.

**BEAR MFG. CO., Rock Island, Ill.
The Greatest Name in Wheel
Alinement and Balancing**

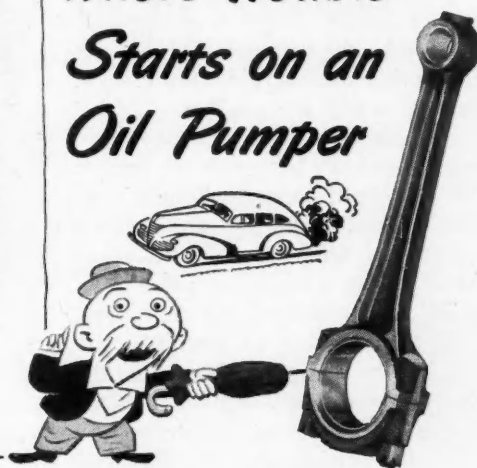
Send for Your FREE Copy Today

**BEAR
WHEEL and STEERING
ALINEMENT
MANUAL**

Here's Where the Trouble Starts!



*And here's
where Trouble
Starts on an
Oil Pumper*



UNCLE SAM ASKS YOU TO KEEP 'EM ROLLING

Unless the millions of essential civilian trucks—upon which we so completely depend—are kept rolling, carrying the nation's foods and war materials, then our vast network of highways, instead of helping us to victory, becomes an entangling web leading to our own destruction.


You can help win the war by staying on your job, servicing these trucks we need so badly, and without which we cannot continue to function. Staying on the job and giving them the best service you can is doing a real service for Uncle Sam. We are doing our part by working day and night turning out the millions of bear-

ings needed to overhaul those engines.

Remember, too, an overhauled engine is just as good as the condition of its bearings. If worn bearings remain in the motor, it continues to burn excess oil in the cylinders, fouling the best of new piston rings, the pistons, plugs and valves with carbon, causing engine sluggishness, poor gas mileage, high operating cost.

Every time you have an engine opened up for reconditioning, check the bearings. If worn, replace in sets with Federal-Mogul Oil-Control Bearings to restore power, pep and economy for the long run!

FEDERAL-MOGUL CORPORATION • DETROIT, MICHIGAN



FOR VICTORY

Anti-aircraft guns, mortars, gun mounts, gun carriers are but a few war units equipped with Federal-Mogul bearings and other precision parts. Federal-Mogul's expanded factories are on 24-hour production of bearings and precision parts for planes, tanks, boats, trucks, motorcycles, for Victory—and bearings to service the millions of automobiles carrying war workers and materials to their jobs! We keep 'em rolling!

WORN ENGINE BEARINGS CAUSE OIL PUMPING



REPLACE WITH GENUINE **FEDERAL Mogul** OIL-CONTROL BEARINGS

TUBELESS TIRES PRO AND CON.

(CONTINUED FROM PAGE 48)

valve, which is mounted in the hole formerly occupied by the valve stem of the inner tube, should be a truck-type valve of the metal type. Procedure for conversion is as follows:

The casing and tube are removed from the rim. The casing is inspected and repaired if it has small holes or fabric breaks. To plug up any small holes that might not be detected, Mr. McGay advocates the use of one or two quarts of any good tire sealing fluid. He does not consider this precaution necessary in the case of new or nearly new casings.

The rim should be cleaned thoroughly and the flanges made smooth for best bead contact. Rough spots on the bead should be sanded down or ground off with a small emery wheel. Then a truck tire valve is inserted in the hole of the rim in the manner illustrated on page 48.

After the casing is mounted on the rim the wheel is placed on a block or can (in the manner illustrated) so that the outside tire bead presses firmly against the rim flange.

Next the valve core is removed and the air applied, at the same time beating the casing with a mallet to make the inner bead contact the rim and form a seal. As soon as the casing snaps into place on the rim, the valve core is replaced and the tire inflated to normal pressure.

It is reported that this tubeless tire conversion has been widely tested on passenger cars. The results of these tests have not been as extensively publicized as the idea itself. There is no information as to the loss of air pressure.

Obviously air pressure loss is a major consideration and tire engineers contend that if a conventional tire is converted "as is" to a tubeless tire the two major problems of "porosity of the casing" and "seepage at the bead" remain unsolved to plague the vehicle operator.

Conventional tires are porous and this porosity gives rise to two troubles: (1) loss of air pressure which results in under-inflation and excessive wear; (2) seepage of air into the casing, which results in bubbles and ply separation and premature failure.

Seepage at the bead is an ever-

present problem. The bead gets quite a kicking around under impacts and seepage is inevitable.

It is conceded that porosity of the casing could be solved in the case of tires built especially for tubeless operation by means of an impervious inner lining. Reclaimed rubber might be used for this purpose.

Seepage at the bead apparently is susceptible of solution, judging by the results experienced by Goodrich with its bead-locking arrangement.

But the problem of punctures is present in conventional and specially-constructed tubeless tires. Questions that arise are: When a tubeless tire is punctured and the seal of the plies is broken, how impervious will the casing be after an emergency repair? Will emergency repairs be as satisfactory and can they be made as readily as is the case with inner tubes?

The popularity of tubeless tires will very likely be gaged by the manner in which these questions are answered.

END

(Please resume your reading on P. 49)

POST-WAR TRUCK DESIGN

(CONTINUED FROM PAGE 49)

serves well as a measure of comparison. For a wing covering of a given stress the following thickness of materials are necessary: wood, 1 inch; magnesium, 3/16th of an inch; aluminum, 1/18th of an inch; stainless steel, .02 of an inch.

In addition, the best authorities tell us that, given a free competitive economy after this war with no attempt on the part of government agencies to establish restrictive standards, we may expect a major change in fuel for motor vehicles. Based on this assumption, we can get, by virtue of the refining methods yet to be developed, 85 octane gasoline as standard and 90 to 95 octane as the premium grade.

Similarly, there may be some pertinent facts to be gleaned from methods of supercharging aircraft engines that will be justified in commercial truck engines. This may well result in a striking reduction of pounds per horse power, and, if lighter alloys

are used, the weight reduction per hp. will be more pronounced. Such reduction may result in physically smaller engines for any given horsepower and a consequent increase in payload capacity and revenue for the vehicles engaged in freight movement on an established weight tariff. This, however, will mean that engines will be called upon to handle per unit time a much greater heat exchange, and new material may well be used in pistons, valves, and other parts affected by such increased heat exchange. Probably, too, conditions will call for a closed cooling system and, with it, a rise in temperature of both the cooling medium and the lubricating oil in the system. Based on present experience, detergent oils, perhaps different from those now in use, will be necessary in order to secure maximum life, and the oil chemists will be called upon to insure the stability of these oils despite the increased temperatures to which they are subjected.

These are but a few of things which will demand consideration in the post-war era. Certainly there is no doubt but what the designing engineer and the chemical engineer will be more closely associated than ever before in the building of transportation vehicles.

END

(Please resume your reading on P. 50)

ODT Recognizes Cooperatives

Industry transportation plans for conservation of motor vehicles engaged in the movement of agricultural commodities "must not be used as a means by which one group can oppress another," Joseph B. Eastman, ODT Director said in a statement. "The Office of Defense Transportation recognizes," said Mr. Eastman, "that cooperative associations, as an integral part of the agricultural production and merchandising system of the nation, perform essential and needed services. The same is true of proprietary operators. Clearly, conservation plans should not be used to break down or impair either the cooperative or the proprietary operations. So far as can be done without loss to conservation, the relations existing among producers, haulers, receivers and any others interested in the marketing of agricultural commodities should be preserved."

Holland Vice President of Kellogg

H. O. Holland has been appointed vice-president of the Kellogg division of the American Brake Shoe and Foundry Co.



let's get tough!

The easy days are over. But there's no time to cry about it. Let's get tough, really tough.

We have the greatest truck transportation system in the world. Our mechanics and our servicing methods are the best.

We can, we must, keep these fleets running — and at top form — for however long this war lasts.

Piston rings will play a most important

part in the protection of our transportation system. No need to hold back when you feel that a truck is in need of a ring change; it's your duty to make the installation.

Hastings Steel-Vent rings, proved by millions of miles in less critical times, are more than ever the rings for today — for checking cylinder wear, preventing waste of oil and restoring fuel economy.

HASTINGS MANUFACTURING COMPANY, HASTINGS, MICHIGAN
Hastings Mfg. of Canada, Ltd., Toronto

PISTON RINGS • PISTON EXPANDERS • VALV-RINGS

HASTINGS STEEL-VENT PISTON RINGS

Tough on oil-pumping • Gentle on cylinder walls

DROP COSTS

(CONTINUED FROM PAGE 33)

[illegible]

Even though Florida Dairies does not use printed forms, it maintains adequate records in book form

trouble, we do not average more than one call per week. Most calls cover minor mechanical ailments which are quickly corrected. Serious accident cases do not run over one per year. Therefore, we need no special wrecking equipment.

We have three spare trucks, one of which we use for road-service calls. When a driver phones in a trouble report, we get his diagnosis of the difficulty. If it is serious enough to require shop work, we take out a truck of the proper type and transfer the driver's load to the spare. In most instances, we can make needed repairs on the spot.

Much of the credit for our small number of road failures deservedly goes to preventive maintenance and governed speeds. While our delivery problem is easy on our rolling stock in some respects, it is hard in others. The firm does not have to run its trucks on a fast, over-the-highway schedule, but it does have to operate them under road conditions which are tough on both vehicles and tires.

Many of our routes include areas in which homes-development has outpaced street construction. Our trucks have to run on sand and the bare limestone rock which in South Florida lies at or near the surface of the ground. Tractional friction converts this rock into abrasive dust which sifts into all unenclosed portions of a truck's mechanism.

Therefore, we grease our fleet units every week. Under present operating schedules, trucks are greased every 250 to 400 miles. Rightly or wrongly, we are sold on the idea that frequent expulsion of grit permeated lubricant, and its replacement with fresh grease, is one of our more important maintenance economies.

Since all units must be in the garage before the day shift goes off duty, the night man, who does the lubricating, can work with practically no interruption, except attention to routine items, such as tire-changing or tightening up a loose brake pedal. We plan to get the lubrication part of our weekly program out of the way during the first three days, leaving the week-end free for other maintenance duties.

These include the filling of radiators and storage batteries, the latter with distilled water. At the same time terminals are tightened when needed, and treated with a branded anti-corrosive. Brakes are checked on a regular bi-weekly schedule.

Our monthly check-up includes rear-end and transmission lubrication and a general motor tune-up. While the bulk of our mechanical and body reconditioning is done during the summer slack season, a necessary overhaul job does not have to wait on the calendar.

Having extra trucks, we do major mechanical work when it appears to

be needed. In this way we often can avoid the replacement of a part which would be required if the vehicle were allowed to run two or three months longer.

Two factors help toward trouble-free operation: 1, what practically amounts to daily inspection, and 2, driver cooperation in reporting needed adjustments or repairs, no matter how trivial the latter may seem. As fleet units are moved around in the garage, and on and off the washrack, any of us who handle them make note of any work to be done, such as adjustment of brakes or tightening of steering gears. These items are scheduled for immediate attention.

Although the company hires drivers as dairy products salesmen rather than as operators, they all seem to take pride in running attractive looking, smoothly functioning trucks. This mental attitude on the part of our driver salesman is due to periodic meetings conducted by the firm's management, and to a realization by the men, themselves, that delayed deliveries caused by road trouble easily can lose customers. Since route men are on a commission basis, lost customers mean smaller pay checks.

Our records for keeping track of maintenance work are extremely simple. Our objective in regard to "paper work" is to hold the latter to the minimum, which leaves a clear history of what has been done on each truck. We use no printed forms.

One of our basic records properly may be called a Daily Service Book. Two pages are headed up with the day of the month and ruled into one wide and several narrow columns. On each line we enter, in the proper column, the number of the truck serviced, the amount of gasoline pumped to it, the quantity of oil put into the crankcase and all servicing details, including oil changes and the date they are made.

At the bottom of the right-hand page, under each date, is entered the gasoline pump and tank readings which are taken at night and morning. The quantity pumped to fleet units, according to these readings, must tally with the total gallonage shown by adding up the gasoline column for that day in the Daily

(TURN TO PAGE 72, PLEASE)



A HUSKY TASK FORCE OF FEDERALS PROVES ITS METTLE IN THE BATTLE OF STEEL



MESABI—GUYUNA—GOGEBIC—MENOMINEE—strange sounding, yet mighty important names in the fierce battle of steel now waged on the work fronts of America. From the great open pit iron mines of these famous ranges comes a gigantic flood of ore, feeding the Bessemer and open hearth furnaces of our war girded industry.

It's a production flood—swelling to 90 million tons or more for 1942. This all-time high in iron ore output tops the previous war peak of 1916 by over 35%. To set this record, unsung heroes of these pit mines have been toiling and sweating 24 hours a day, six days a week, to make sure our industrial effort

shall not fail—to serve the ends of swifter victory. Into the production breach have gone fleets of husky ore trucks to match the back-breaking performance of both producers and miners with a

brand of consistent, round-the-clock dependability that has won the everlasting respect and esteem of men who have the "know how" to really deliver the goods.

Federal's part in helping speed this essential work is added evidence of the inherent qualities of heavy duty, all-truck performance so consistently built into its transport units of varying tonnage capacities. Again

we repeat: "Toss the Tough Jobs to Federal!"
FEDERAL MOTOR TRUCK CO., DETROIT, MICH.

"KEEP 'EM ROLLING!"

Pledged
**U.S. TRUCK
CONSERVATION CORPS**

● America's trucks—YOUR TRUCKS—must keep working for Victory. Frequent and thorough check-ups with any Federal Dealer will help keep trucks on the job. Pledge yourself to "keep 'em rolling" for Uncle Sam.

FEDERAL TRUCKS

Since 1910...Known in Every Country—Sold on Every Continent

DAIRY'S INSPECTIONS DROP COSTS

(CONTINUED FROM PAGE 70)

Service Book. By this means we can catch any errors in recording the amount of gasoline pumped, and can detect any diversion to other than legitimate business use.

On the first of each month we start a new Daily Service Book and file the old one. It then becomes a permanent part of our records.

Part of our preventive maintenance program, such as weekly lubrication, has been in effect for nearly 20 years. Other portions have been added or altered from time to time in order to match changed operating conditions.

With the coming of the "Pearl Harbor incident," the company's management began the careful scrutiny of delivery schedules with the view to possible adjustments. Therefore, when ODT made its request for reduced mileage, our knife was al-

ready sharpened preparatory to making drastic cuts in regard to deliveries.

The dairy sliced its retail schedule squarely in two, putting this class of delivery on an every-other-day basis. Drivers now serve half of their customers on one day and the other half the following day. This plan has effected more than a 50 per cent cut in mileage.

Formerly, route men started out on their daily trips anywhere from 1 a. m. to 3 a. m., depending on the size of their routes. They returned some time during the forenoon, rested for two or three hours, and then went back over their routes to collect and to solicit new customers.

Drivers now leave the plant between 8 a. m. and 9 a. m. Since they are on an all-daylight schedule, they combine their collection and solicitation work with deliveries.

Not only does this revision of schedules result in the saving of vital rubber and gasoline, but it serves the war effort in other ways. During an enemy air raid our trucks would be automatically off the streets and highways. Moreover, under present arrangements our drivers have the time to devote to Civilian Defense Committee activities. In fact most of them now are serving as air raid or fire wardens.

Whereas, we formerly covered wholesale routes at least twice daily, and in addition made special deliveries when requested, we now deliver to stores, hotels and restaurants on a flat once-per-day basis.

Another big saving in traveled mileage has been the elimination of all special deliveries, both wholesale and retail, except to hospitals and to an aviation school which holds night classes. Summed up, the dairy's fleet operation for 1942, as compared with 1941, shows a mileage saving of 42 per cent. This is more than the ODT requested.

When we first inaugurated our curtailed-delivery plan, we anticipated an unknown percentage of lost business, particularly in our residence trade. This loss we hoped to pick up, in part at least, through increased sales to stores. However, most of the firm's retail customers have shown a willingness to cooperate, once the reason for the change was explained to them.

(TURN TO PAGE 74, PLEASE)



with BLOOD BROTHERS UNIVERSAL JOINTS

Whatever your requirements, if your problem is to transmit power at an angle, our field and factory experience of more than 30 years is at your command. Our Engineering Department will gladly submit quotations covering your requirements.

BLOOD BROTHERS MACHINE COMPANY
Division of Standard Steel Spring Company
ALLEGAN, MICHIGAN

Backed by
over 30 years'
Factory and Field
Experience



SPECIFY
Blood Brothers
UNIVERSAL JOINTS
FOR RELIABILITY AND
ENGINEERING EXCELLENCE

IMPROPER FIT!— 1 of the 11 Reasons for Belt Failure—



**Comes to Life in the Pages of
Dayton's Belt Service Manual**

Improper fit—its causes, its diagnosis and its cures are graphically brought to life in the pages of DAYTON'S BELT SERVICE MANUAL. Yet improper fit is just 1 of the 11 specific conditions which cause premature belt failure to waste Fleet Owners' precious time and materials.

So today when man power is at a premium and the maintenance of essential schedules is a "wartime must," write for Dayton's concise Belt Service Manual and information about Dayton's FREE FLEET SURVEY of Fan Belts and Accessory Drives.

**THE DAYTON RUBBER MFG. CO.
DAYTON, OHIO**

EXPORT DIVISION
DAYTON RUBBER EXPORT CORPORATION
38 Pearl Street New York, N. Y. U. S. A.



**THROW YOUR SCRAP
INTO THE FIGHT!**

**BUY WAR BONDS
AND SAVINGS STAMPS**

Dayton
THE GREATEST NAME IN FAN BELTS

85% Original Equipment on all American Makes of Cars
WORLD'S LARGEST MANUFACTURER OF V-BELTS

DAIRY'S INSPECTIONS DROP COSTS

(CONTINUED FROM PAGE 72)

All of our trucks are equipped with governors. Before the national emergency tire and gasoline conservation program went into effect, governors were set at 35 to 38 m.p.h., depending on the type of route served. Now, governors are set at 27 to 30 m.p.h.

We use no special equipment for

measuring gasoline consumption or for engine tune-up, except a timing light. However, we do watch closely the fuel consumption of each fleet unit. If any unit shows more than a very temporary increase in per-mile use of fuel, we immediately check the vehicle in order to determine whether or not there is any mechanical reason for excess gas consumption. If there is, we correct it. If not, we caution the driver. However, most of our route men are cooperative in saving fuel.



**WEAVER
TRUCK & BUS
WHEEL
DOLLY**

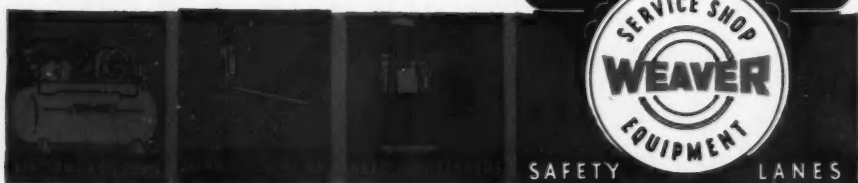
Saves vital time and manpower on inspections and all jobs requiring wheels to be pulled. One man can remove heavy dual or single wheels from the spindle, take them to the service department, and replace them. Dolly will pick wheels up from the floor and raise them to exact spindle height by means of the screw jack. See your jobber or write direct for complete information.



SHOCK-TYPE BEAD LOOSENER

Speeds removal of tires from trucks, buses and tractors by delivering a strong blow in exactly the right places to loosen the bead from the rim without pulling the wheel. Saves injury to tire or rim ... speeds work ... safer to use.

**WEAVER MFG. COMPANY
SPRINGFIELD, ILLINOIS**



If verbal means fail, we have a mechanical method available for achieving the desired objective. An additional hole drilled in the accelerating pump control arm, permitting the connector link to be set back, reduces fuel injection through the carburetor. This remedy generally proves effective in checking the waste of gasoline on the part of pedal-patting operators.

In regard to engine idling while route men are making calls, the company has no hard and fast rule. Instructions to drivers are that if they have 30 to 60-second stops to make, such as door-step deliveries, engines may be allowed to idle. Batteries and starting mechanisms, as well as gasoline, now must be conserved. When making collection or sales calls route men are expected to shut off their motors.

Our record of per truck consumption of oil and gasoline is kept in a bound book and on a monthly basis. The consumption record for each unit runs continuously on consecutive pages, headed up with that unit's fleet number.

Ruled columns provide for entering on each line the day of the month, gallons of gasoline pumped to that vehicle, quarts of oil put into the crankcase, mileage for the month to date, total mileage and average miles-per-gallon consumption of gasoline. By this method of record keeping we can tell at a glance the amount of gasoline and oil used by each unit over any given period of time.

In order to obtain complete accuracy in regard to fuel consumption, the tank on each unit is filled to the top on the evening of the last day in the month, regardless of whether or not gas was pumped to that vehicle earlier in the day.

We are exceedingly well pleased to learn from the record that our actual saving in the amount of fuel used for the dairy's fleet operation during 1942, as compared with previous year figures, averages 39.8 per cent. This saving, be it remembered, is in addition to that already effected over a long period of time as a general operational policy.

The company's long term fleet operating economies have extended also to the use of oil. Crankcase levels are checked every time fuel is

(TURN TO PAGE 76, PLEASE)

TRUCK OWNERS *Attention!*



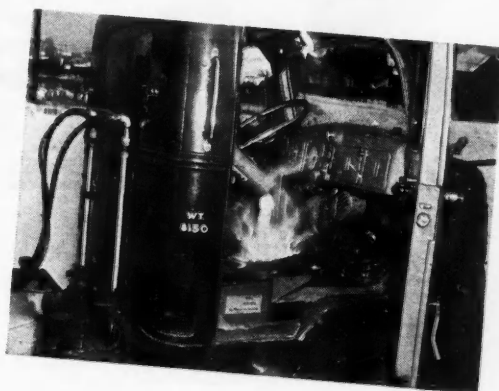
You can now obtain by Immediate Delivery an Underwriter's Approved Fire Extinguishing Unit



DRY CHEMICAL

FIRE EXTINGUISHER

Now Available for the Protection of your Automotive Equipment Against Fire Hazards



This product complies with the revised regulations No. 3.349 and No. 3.3491 of the Motor Carrier Safety Regulations issued by the Interstate Commerce Commission and is approved under the Re-examination Service of the Underwriter's Laboratories.

(War Emergency Specification)

ANOTHER OF OUR CONTRIBUTIONS TO THE WAR EFFORT

DUGAS is a dry-powder chemical compound, moisture resistant and free flowing. Extinguishes fire efficiently. **HARMLESS**—to motors, mechanical parts, materials, everything but flame—*non-abrasive, non-corrosive, non-poisonous.*

ALWAYS READY—Will not cake, harden, evaporate, spoil, or deteriorate. Not affected by dampness. No periodical recharge necessary no matter how long the extinguisher is unused.

WON'T FREEZE—Operates efficiently in zero weather.

NO TOXIC FUMES OR GASES—DuGas on meeting flame generates carbon dioxide and water-vapor gases.

WILL NOT CONDUCT ELECTRICITY—DuGas can be safely used on any electrical fire, without danger of shock to the operator, or harm to the equipment.

The DuGas Dry Chemical Fire Extinguishing Unit consists of two tubes, each containing seven pounds of DuGas powder, both contained in a bracket suitable for mounting on trucks.

PRICE OF UNIT . . . \$6.50 F.O.B. MARINETTE, WISCONSIN

DUGAS ENGINEERING CORPORATION, Marinette, Wisconsin

Owned and Operated by the Ansul Chemical Company
WRITE YOUR NEAREST DISTRIBUTOR

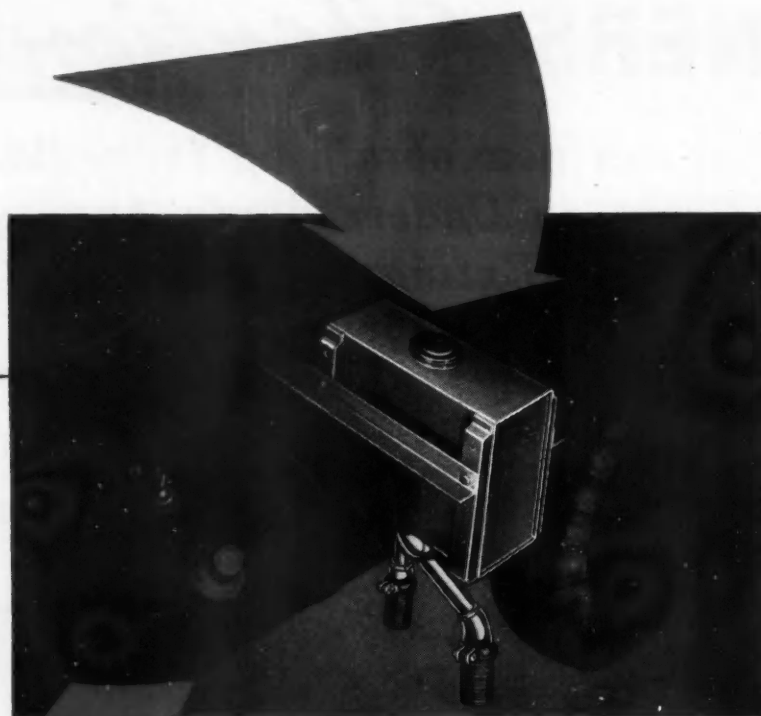
NEW YORK CITY
Dugas Engineering Corp.
115 Broad Street
BOSTON, MASSACHUSETTS.
General Equipment Corp.
261 Franklin Street
PAOLI, PENNSYLVANIA
Ansul Chemical Company
BUFFALO, NEW YORK
Bu-Ro Fire Equipment Co.
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PITTSBURGH, PENN.
Williams & Co., Inc.
901 Pennsylvania Avenue
CLEVELAND, OHIO
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CINCINNATI, OHIO
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COLUMBUS, OHIO
Williams & Co., Inc.
31 N. Grant Avenue
CHICAGO, ILLINOIS
DuGas Engineering Corp.
Rm. 1563, 20 N. Wacker Dr.
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Ansul Chemical Company
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W. P. & R. S. Mars Co.
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307 S. Cincinnati
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Gustin-Bacon Mfg. Co.
710 T & P Bldg.
HOUSTON, TEXAS
Gustin-Bacon Mfg. Co.
448 M & M Bldg.
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Ansul Chemical Company
LOS ANGELES, CALIFORNIA
Ansul Chemical Company
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CANADA
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P. S. Pell & Co.
88 S. Queen Street

EXPORT AGENTS
Aeroaffiliates, Inc.
115 Broad Street
New York, New York



5 Big Savings with LINTERN SANDERS

Hundreds of operators have equipped their trucks with Lintern Sanders and are now (1) saving tires, (2) protecting equipment, (3) maintaining schedules, (4) preventing accidents and (5) reducing costs.

You, too, can realize these five important savings by equipping your trucks with Lintern Sanders. Quickly and easily installed. Little, if any, maintenance. Prompt shipment.

Fill in the coupon and mail today for bulletin and name of nearest distributor.

THE LINTERN CORPORATION
58 LINCOLN AVENUE • BEREA, OHIO

THE LINTERN CORP., 58 LINCOLN AVE., BEREA, OHIO
Please send me copy of Lintern Sander
Bulletin and name of nearest distributor.

(My name) _____ (Position) _____

(Company) _____

(Street, City, State) _____



DAIRY'S INSPECTIONS DROP COSTS

(CONTINUED FROM PAGE 74)

pumped to a unit's tank. On most routes this is done every other day. For a number of years oil changes were made consistently every 1000 to 1200 miles. In 1937, we began to equip our trucks with oil filters. Since then we have changed oil every 3000 to 4000 miles, or even less frequently. Taken at random from our gas-and-oil consumption record, here are some data which may prove interesting:

We will use the figures on No. 3 truck—a Dodge 1½-ton job—as an example. This unit was purchased in January, 1932. During the first seven months of the following year No. 3, traveling 10,600 miles, used 157 quarts of oil, an average of 67.5 miles per quart.

Four years later, we put on an oil filter. During the corresponding seven months of that year, the same truck traveled 10,003 miles, using 48 quarts, a per-quart average of 208.4 miles. In 1942, when the unit was 10 years old, still using the same type of filter, No. 3 traveled 6,351 miles and used 23 quarts of oil, an average of 276 miles per quart.

Incidentally, the first month after we bought this truck its fuel consumption averaged seven miles per gallon. During the corresponding month, 10 years later, No. 3 consumed gasoline at the average rate of 7.28 miles per gallon.

From the above figures it will be seen that filters have stepped up our oil mileage 300 to 400 per cent. The figures show, too, that consistent mechanical maintenance of rolling stock is more important than its age.

We change filter cartridges at the same time we make oil changes. While we grant that it may not be very scientific, we depend on the condition of the oil—its appearance and feel—as well as speedometer readings, to indicate just when oil changes should be made.

Drawn oil is sold in quantity to a local reclaimer. We never have attempted to do any reclaiming ourselves but may try it if and when a serious oil shortage develops.

Lately, we have been experimenting with an oil "reinforcer" and with a

(TURN TO PAGE 78, PLEASE)



- Visibly Clean Oil through Engineered Filtration
- Selected Materials . . . Perfected Construction
- Will Not Break Down the Oil or Remove Additives
- Lowest Filter Refill and Oil Cost per Mile
- Available Now . . . Your Jobber CAN Deliver

WIX "Engineered Filtration" is No. 1 in importance today, because perfect, trouble-free lubrication is the very key to your whole problem of motor conservation. *New equipment is not available . . . PERFECT LUBRICATION WILL KEEP PRESENT EQUIPMENT ROLLING.*

Spare parts are not available . . . PERFECT LUBRICATION CUTS DOWN WEAR TO A MINIMUM.

Oil is scarce and must do double duty . . . PERFECT LUBRICATION KEEPS OIL CLEAN AND EXTENDS ITS LIFE.

WIX Filterefils are available in a size and type to fit every automotive filter AND THEY ARE AVAILABLE—NOW! See your Jobber today, or write direct for full information.

wix
TRADE MARK

FILTEREFIL

ACCESSORIES CORPORATION, GASTONIA, N. C.

ACCESSORIES CORPORATION
GASTONIA, N. C.

Gentlemen: We are interested in refills for

Filters (GIVE MANUFACTURER'S NUMBER). Please send us quotations at once.

NAME

ADDRESS

CITY STATE

WAREHOUSES: NEW YORK • KANSAS CITY, MO. • MINNEAPOLIS • LOS ANGELES • SAN FRANCISCO
CANADIAN FACTORY: WIX ACCESSORIES CORPORATION LIMITED, TORONTO, CANADA

DAIRY'S INSPECTIONS DROP COSTS

(CONTINUED FROM PAGE 76)

gas additive. The former is intended to increase the oil's lubricating qualities, while the latter is to reduce the deposit of carbon on piston-heads, valves and seats. In the case of neither do we yet feel competent to render an opinion as to its long-term benefit.

About 15 years ago, purely as an

economy measure, Florida Dairies began to use recapped tires and has continued to use them because they have proved to be money-savers.

A new tire, plus three recappings, more often than not gives us 40,000 miles of use. At current prices for tires and for recapping, that mileage figures up slightly more than \$1.00 per 1,000 miles.

We have been in the habit of running a new tire until the tread shows definite signs of becoming smooth. This usually happens at about 10,000

miles. The tire then was removed, and recapped, after which it would run another 10,000 miles, when it again would be recapped. We expect to get, and generally do get, 10,000 miles of wear out of a recap, even a third recap.

Our experience in regard to the number of times a new tire can be recapped is that 98 per cent of them are in good enough condition at 10,000 miles to receive a first recap, 75 per cent can be recapped a second time, while 50 per cent are worth a third recap.

As an experiment, we have given tires a fourth recap. However, we find that even when a tire looks healthy, after 40,000 miles or more of wear the carcass is pretty apt to be weakened by internal separation of the cords to the point where another recapping job is a doubtful investment.

Because most of our operation is over city streets and suburban roads, none of which are crowned, our tires generally wear pretty evenly on both sides of the truck. Therefore, they usually are replaced in pairs.

Because of tractive friction, rear wheel tires are likely to wear first, so we often shift from front to rear. We have no system for shifting at any predetermined mileage but make the change when the condition of the casings justifies it.

This method is not as haphazard as it may sound. Tires are under almost constant inspection. Whenever units receive routine servicing—greasing, washing or mechanical maintenance—tires are looked over for any signs of injury. At the same time that brakes get their bi-weekly check-up, casings also are scrutinized for any appearance of excessive wear.

Drivers, too, keep a close watch on tires as they cover their routes. This is another instance where daylight deliveries aid in conservation. As route men return to their trucks, after making a call, they run their eyes over the tires nearest them, on the lookout for cuts, nails, glass or under-inflation. They also watch streets and roads for broken glass.

Our driver education in regard to the conservation of rubber is simple. It consists chiefly of the oft-repeated warning: "No tires, no jobs." Since Miami is not a war industries center, (TURN TO PAGE 80, PLEASE)



CLEAN REGULARLY

Wash with solvent and blow dry to remove all old lubricant and foreign matter. Use an Ahlberg pressure gun and washer to make cleaning certain.



LUBRICATE THOROUGHLY

Use the proper grade of good lubricant and keep it perfectly clean. Repack bearing carefully using the Ahlberg pressure gun.



SAVE WHEN WORN

Worn Ball Bearings should not be "junked," but reprocessed. This saves valuable materials and takes the place of new bearings for replacement use.

SAVE

ALL WORN
BALL BEARINGS
FOR
REPROCESSING
the

AGB WAY...

Maintenance Men are urged to use reprocessed ball bearings for replacements. The alloy steel in the races is valuable and scarce, when reprocessed, these races fitted with new oversized balls and new retainers make up bearings guaranteed to give new bearing service.

Ask your Jobber's salesman about the saving affected by the AGB exchange plan. If you are not familiar with the precision bearing washers—driers and packers available thru Ahlberg branches ask about them now—these units are necessary to make bearings now in service last longer.

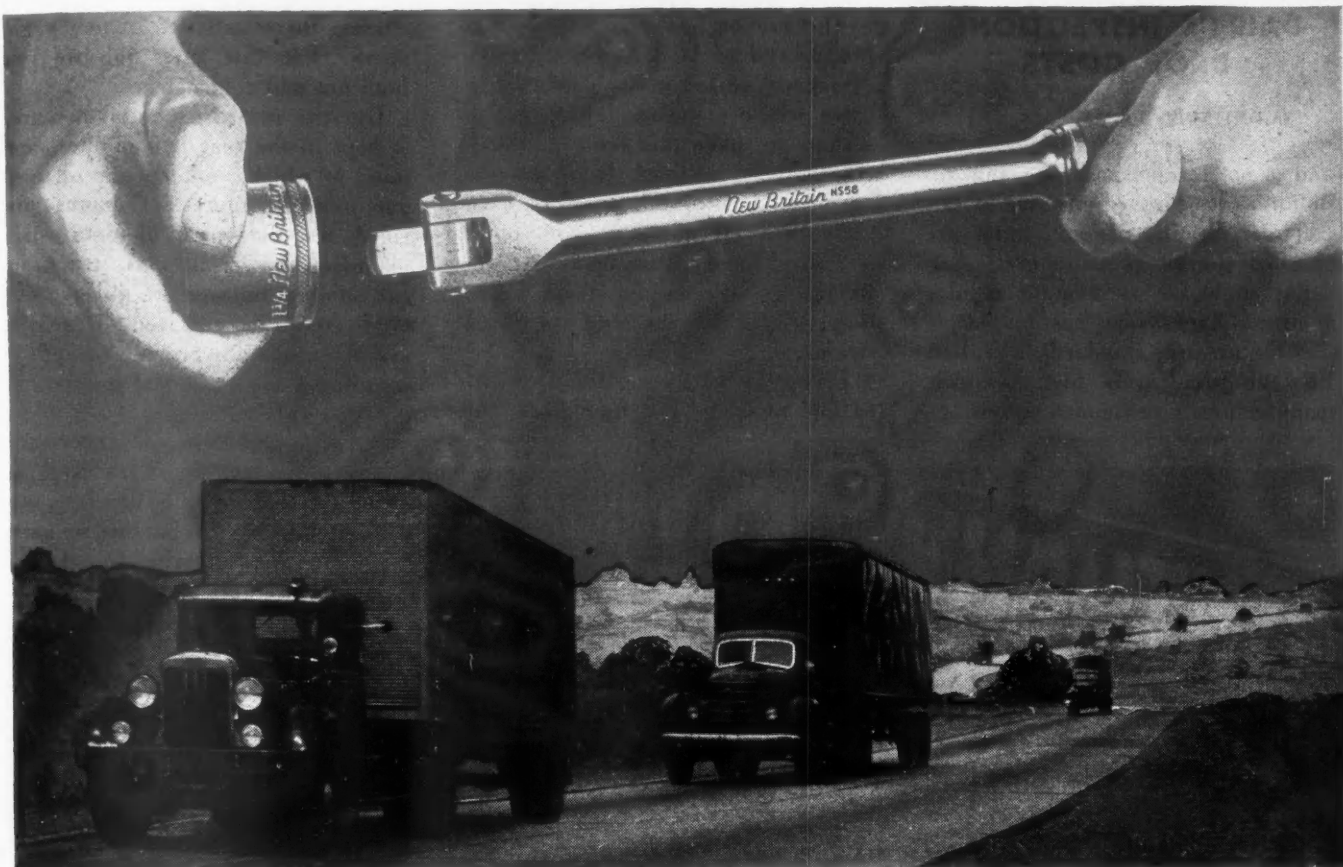
AHLBERG

BEARING COMPANY

Manufacturers of Gun Master Ball Bearings

★ 3006 WEST 47th STREET • CHICAGO, ILL. ★

Our West 47th PRECISION BEARINGS, INC. Los Angeles

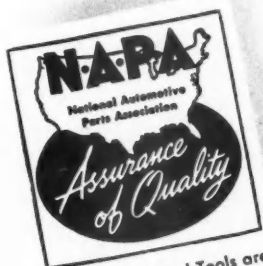


CARE for YOUR TOOLS . . . AMERICA CAN'T AFFORD IDLE TRANSPORTATION!

Your Hand Tools are priceless possessions today! . . . They are closely linked with the slogan—"KEEP 'EM ROLLING". Carelessness and abuse of Tools was never good business, but NOW, misuse of Tools interrupts America's vital wartime transportation. Don't lose your Tools . . . don't break them . . . don't attempt to make them do jobs they're not designed to do.

All that metallurgical science and precision manufacture can provide has been put into your New Britain Tools. They'll serve you and the Nation well if you use them properly. But, even New Britain Tools will not last if they're abused.

Now, because these Tools of Greater Strength and Better Fit are "In the Service", it may be difficult to replace the tools you have—so, we repeat . . . CARE FOR YOUR TOOLS . . . America can't afford idle transportation! The New Britain Machine Co., New Britain, Conn.



New Britain Hand Tools are sold by leading Jobbers everywhere, and master stocks are maintained in 38 NAPA warehouses from coast to coast.

New Britain



THE ARMY-NAVY "E" PENANT flies over the New Britain plant today, signaling outstanding performance in the production of machine tools, aircraft engine parts and projectiles.

GREATER STRENGTH · BETTER FIT

TOOLS

DAIRY'S INSPECTIONS DROP COSTS

(CONTINUED FROM PAGE 78)

and is not located near one, this admonition has proved effective so far.

Tires on all of our units are checked for air pressure every Saturday night, as an item of regular routine. Experience has taught us that the pressure standard which best fits our problem is five lbs. over manufacturer's recommendations.

The use of boots or reliners has not proved to be an economy. We prefer vulcanized inside patches. In cases where a casing injury is too serious to make this remedy practical, we are inclined to doubt the wisdom of risking a good tube in such a tire. If we come to the point where we have to use boots and reliners, we will employ them where they will receive the least tractional strains.

Except for major repairs, we do all of our own tire and tube work, in-

cluding the installation of new valve stems. For this latter job we use both hot and cold patches.

Our tire record is continuous, and is kept in the rear half of the same book in which we keep our oil and gas mileage figures. Columns are ruled for the entry of date, size, manufacture, serial, cost, truck or car number, mileage on, mileage off, miles run when removed. If recaps are mounted, the word "recap" is substituted for the serial number in the same column.

It now has become necessary to conserve man-hours as well as rubber and gasoline. Therefore, we are grateful for the schooling we gave ourselves in time saving to get bigger work volume, when the main object was only to obtain lower fleet operation cost.

In order to speed up our work, we have tried to eliminate lost motion by grouping tools and fixed equipment used for any given purpose, and by locating them so that they are in logical relationship to each other. All tools and equipment used for electrical and battery work, for example are grouped together. Farther along the line our machine shop and wood-working equipment is grouped; and so on, each grouping being planned to save steps and increase productive time.

In addition to this type of shop layout, we have devised other ideas for efficient maintenance work. For example, we have made our welding equipment portable, simply by mounting the various units on casters. Thus, the equipment can be moved where needed much easier and quicker than moving trucks to the welding equipment, especially if they are down for repairs. A portable work bench, also mounted on casters, is another idea that has contributed much in the way of convenience and time saving. These units can be seen in the illustrations that accompany the article on its opening pages.

END

(Please resume your reading on P. 34)

Pennsylvania Appoints Billings

Earl R. Billings, formerly sales and advertising manager of Everett Piano Co., South Haven, Mich., has been appointed advertising and sales promotion manager of Pennsylvania Rubber Co., Jeannette, Pa. Mr. Billings' appointment is effective Dec. 1, 1942.



ANTHONY
HYDRAULIC

**HYDRAULIC HOISTS
AND BODIES
are helping
*Win the War!***

FOREIGN BASE CONSTRUCTION
CONSTRUCTION
AIRPORTS
CAMPS
IRON RANGE

SERVING BOTH FRONTS

Anthony Hydraulic Hoists and Bodies in capacities from 5 to 30 tons are working day and night to build America's most vital Highway, and airports, camps and bases around the world. Deep in the pits of rich ore deposits Anthony Hydraulic Hoists and bodies move endless streams of essential ore. Anthony has and is producing equipment for both fronts, military and construction, delivering on schedule.

**STOCKS OF "SUPER" HYDRAULIC HOISTS AND BODIES ARE CARRIED
AT FACTORY and DISTRIBUTING POINTS FOR IMMEDIATE SERVICE**

ANTHONY COMPANY, INC.
STREATOR ILLINOIS



PROTECT PRECIOUS HORSEPOWER

CASITE GIVES "SUMMER STARTING" *Even in zero weather!*



★ Let Casite protect the engines of your fleet and give them "Summer Starting," even in zero weather. Every unit in your fleet is an important factor in providing vital transportation. Casite will help to keep every one of them rolling with added power and performance.

Casite cleans out power-destroying sludge and gum, frees sticky valves and

rings. Casite's oil-carrying ability speeds lubrication to close tolerance parts, insures quicker starting—causes less wear on vital engine parts.

When you think of fleet conservation, remember Casite's added protection against excessive engine wear.

Gasoline or Diesel engines run better, last longer . . . with CASITE!

THE CASITE CORPORATION • HASTINGS, MICHIGAN

CASITE

CLEANS OUT MOTORS
KEEPS MOTORS CLEAN

Guaranteed Winter Starting or Double Your Money Back . . . Ask Your Jobber for Details!

FEMALE LABOR IN GREAT BRITAIN

(CONTINUED FROM PAGE 31)

be found, and for this work they undergo a complete course of instruction under skilled military personnel. The heavy vehicles of these Service women drivers, too, generally go in convoys, thereby removing many of the difficulties that would face a lone truck driver on long distance. They drive from govern-

ment depot to government depot, and for them there is no difficulty of getting a bed and meals.

Women generally are attracted to the job of driving light trucks and delivery vans in their own home districts, many of them being experienced drivers of motor cars before the war. With the ban on all private motoring, some women who were keen motorists take eagerly to the chance of driving a light commercial vehicle. The open air life also appeals to them. From appli-

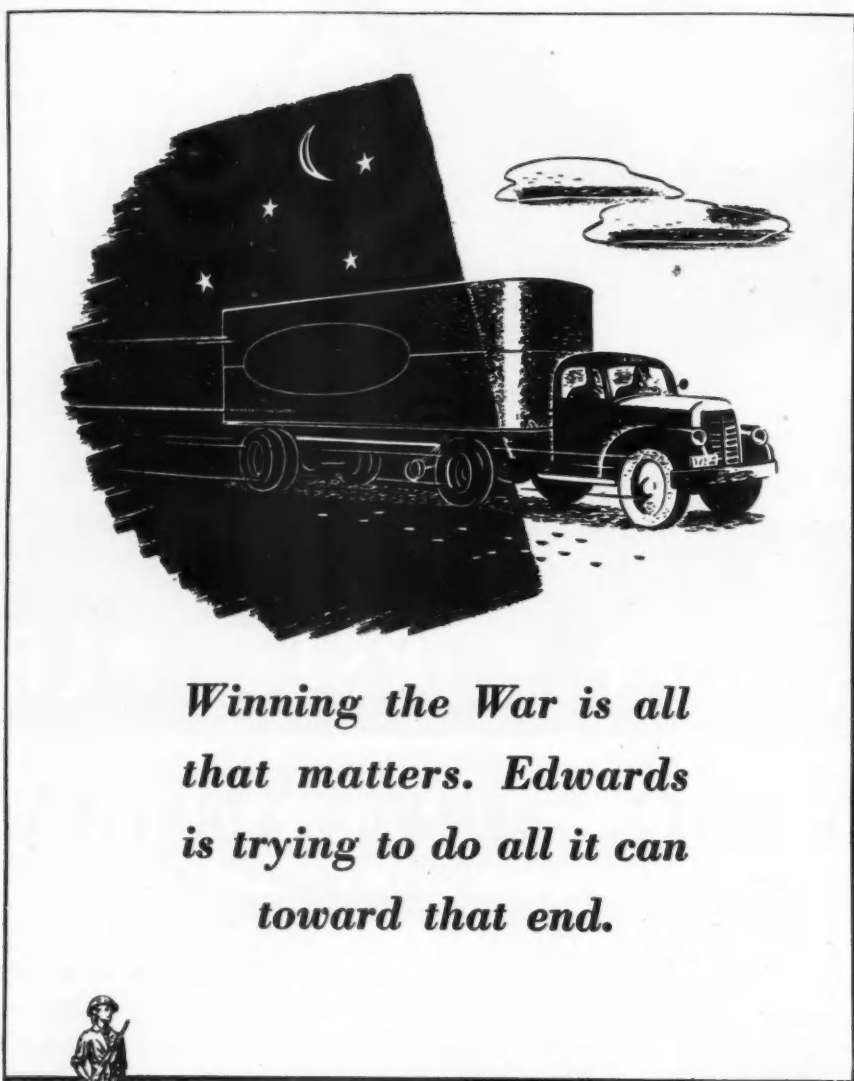
cants for jobs as light drivers, the sufficiently persuasive manager is able to secure repair shop recruits.

Approximately 75 per cent of the women employed in the transport industry here are single women. In regard to the repair shops, the usual procedure is to start the women as mechanic's assistants, at 20 per cent less than the full rate, for a period of from four to ten weeks, the actual period depending solely upon the speed at which they become proficient as mechanics. The type of women most suitable are those who are of good physique and who have preferably either worked in a factory, where conditions are often similar to those of a large repair shop, or who have worked outdoors. It has been found that unless they possess natural aptitude for a heavier type of job, female office workers do not readily adjust themselves to working in a repair shop, although a large number of sedentary workers have made efficient drivers of light vehicles.

It is usual to employ drivers with experience, although some fleet operators are prepared to give a course of driving instruction to very suitable and adaptable applicants. As most light vehicles are more or less similar in construction and size to private automobiles, it is not a difficult matter to obtain skilled applicants for this class of work. Employers of female drivers of delivery vans and other light vehicles are unanimous in their praise for their driving and ability to effect minor adjustments (such as tire changing, etc.) if necessary whilst on the road. But here again it must be remembered that they do not operate very far from their garage base, and that their vehicles are always fully checked before going out.

Female drivers are not asked to handle very heavy class of goods as a general rule, and broadly speaking their duties can be classed as within the light goods list such as food-stuffs and similar small merchandise. Managers state that women in this department of the transport industry are every bit as reliable, punctual, and efficient as men, and, whether married or single, they give complete satisfaction. The heavy vehicles and heavy types of loads are still handled by men.

(TURN TO PAGE 84, PLEASE)



*Winning the War is all
that matters. Edwards
is trying to do all it can
toward that end.*



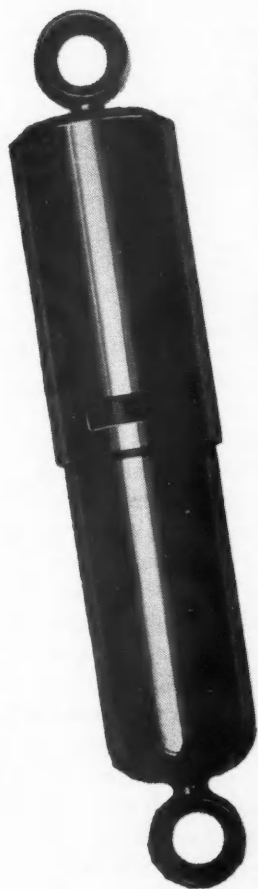
WE'RE BUYING THEM — ARE YOU?

EDWARDS Trailers

EDWARDS IRON WORKS, INC., SOUTH BEND, IND.

PRODUCERS OF TRAILERS TO DELIVER THE GOODS...
AND OTHER ITEMS UNCLE SAM NEEDS FOR VICTORY.

**JEEPS — The most famous War Vehicles in the World
are equipped with Monroe Shock Absorbers**



THE JEEP AND MONROE SHOCK ABSORBERS

● From the start, this "world wonder" was equipped with Monroe Shock Absorbers.

News reels, International pictures and thousands of publications, show the tremendous superiority and utility of the Jeep.

Millions of United Nations Forces using this Vehicle on fighting fronts from

Russia to New Guinea, and from Egypt to the Solomons, attest to the marvels of this vehicle equipped with Monroe Shock Absorbers.

It would be utterly impossible for anyone to furnish a stronger, or more emphatic testimonial supporting the mechanical superiority of Monroe Shock Absorbers.



FEMALE LABOR IN GREAT BRITAIN

(CONTINUED FROM PAGE 82)

The employment of female mechanics and mechanic's helpers is continuously increasing, and daily more and more women replace men in the repair shops. It is part of the system in force in repair shops throughout the country that more and more women shall be so employed to replace men called to the

Services. Indeed, even in those few cases where a conservative and old-fashioned management dislike the idea of admitting women to their repair shops, they are forced to do so; as those garages working on government repair work are continuously under the keen supervision of Ministerial officials, who order the replacing of male by female labor wherever possible.

The system invariably employed in British repair shops is that each male mechanic is detailed, whilst

carrying on his own work, to advise and teach one or two female mechanic's helpers allocated to him. By this means a constant flow of skilled and semi-skilled female labor is maintained. These females, when fully skilled, in turn advise new and unskilled women helpers. So we arrive quite speedily at a state of labor as detailed by F. G. Smith, of the Ministry of Transport, who found 160 women mechanics to eight male mechanics in one London repair depot.

Adequately tutored, these women mechanics and mechanic's mates have been found universally satisfactory, and although in the early stages of their training they are slower than their male equivalents, they readily develop in skill and strength until they compare quite favorably with seasoned male repair workers.

Management is careful in all cases not to impose long hours or the heavier type of repair work on female mechanics until they are certain of their capabilities; and always extend sympathetic consideration to those whose home life (because of marriage, an aged parent to look after, etc.), necessitates their working only the minimum hours required (namely, 48 hours in any consecutive seven days) to ensure reservation from the uniformed services.

Both driving and repair shop work are classified as a reserved occupation, providing the repair shop is engaged on work of national importance and is so listed by the Ministry of Labour (which issues a certificate to that effect; of which certificate a copy must be prominently displayed in the repair shop premises). These certificated undertakings are compelled to accept government repair work, and can only proceed with repairs to ordinary commercial trucks, delivery vans and private cars when temporarily empty of government work which, in practice, seldom happens. However, as such governmental work includes all the thousands of vehicles operated by the Ministry of Food, Ministry of Supply, and other ministries, as well as those vehicles working within the pools controlled by the Ministry of Transport, there is today not a great deal of ordinary private commercial repair work to be done.

(TURN TO PAGE 88, PLEASE)

A Wartime Message to SERVIS RECORDER CUSTOMERS

You might be interested to know that this same Servis Recorder which you use on your trucks, is also used on machinery of all kinds, such as:

**CRANES, PUNCH PRESSES, MINE LOCOMOTIVES,
STEAM SHOVELS, ORE BRIDGES, WIRE ROPE MACHINES,
REVERSING VALVES ON SOAKING PITS, ETC., ETC.**

• That means, machinery doing war work! And our Recorder still does the same kind of job, it keeps *machinery* busy!

Bolted Right On

Attached in about the same way as on a *truck*, it "rides on the machine" and makes a daily record of Busy Time, and more important still, IDLE TIME.

Machinery Is Scarce

So is the metal that makes machinery, the labor, the time, etc. But look!... If we can increase the

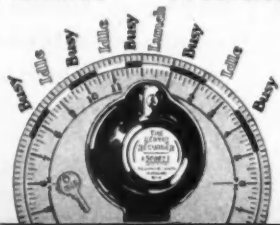
productive time of these machines only 10%, it is just like finding thousands of new machines, just when we need them most!

It means:

Creating New Machines Out of Thin Air

We thought you might like to know, that in these days the orders that come in to us, more and more show us that the *Servis Recorder*, your recorder, is doing that kind of

war-time job. The Service Recorder Co., 1375 Euclid Ave., Cleveland, O.



The Servis Recorder

Tells Every Move Your Truck Makes

"CoMaX BRAKE LINING

not only saves us money, but keeps our equipment rolling instead of tying it up for repairs"...

writes Consolidated Forwarding Company

CONSOLIDATED FORWARDING COMPANY

INCORPORATED

1556 WEST PIERCE STREET

Phone: Mitchell 5112

MILWAUKEE, WISCONSIN

TERMINALS

St. Louis, Mo.
Chicago, Ill.
Waukegan, Ill.
Racine, Wis.
Kenosha, Wis.
Milwaukee, Wis.



I. M. SCHERER
President

I. B. SCHERER
Vice-President

W. J. EDWARDS
Secretary

October 28, 1942

Wagner Electric Corporation
925 N Broadway
Milwaukee, Wisconsin

Gentlemen:

Several years ago we decided to try CoMax brake lining to find out for ourselves if it was the answer to our brake problems. It did not take us very long to learn that CoMax was the answer and we have used it exclusively ever since.

CoMax has eliminated brake squeals, drum scoring, frequent brake adjustments and brake relining (this not only saves us money but keeps our equipment rolling instead of tying it up for repairs).

Our trucks, tractors, and trailers are equipped with various types of brakes and power. CoMax improves the performance of them all. No more wet weather trouble either.

We do not hesitate to recommend CoMax brake lining to all fleet operators.

Yours very truly,

CONSOLIDATED FORWARDING COMPANY

Dale Tucker

Dale Tucker, Dispatcher

"IT'S THE ANSWER TO
BRAKE PROBLEMS"



USERS are great boosters for CoMaX Brake Lining... The letter reproduced above is a typical example of what those who speak from experience have to say about the high quality and superior features of CoMaX.

CoMax is the finest in molded brake lining. It is ideal for quick, safe, smooth stops. It is long-lived, has reinforced backing, is non-compressible,

uniform in texture, easy on drums, ideal for quick stops, quiet and smooth in operation, and age-proof. In short, Wagner CoMaX is the answer to the demand for a dependable and high-quality brake lining. Available in rolls, sets, blocks and slabs.

Get in touch with nearest Wagner CoMaX jobber, or write us for catalog and prices covering complete line.


B43-1

AUTOMOTIVE
PARTS DIVISION

Wagner Electric Corporation

SAINT LOUIS, MO.
U. S. A.

HYDRAULIC BRAKE PARTS & FLUID... AIR BRAKES... BRAKE LINING... CLUTCH FACINGS



We'll get there

"SURE we're stuck, but they are breaking the drift through with a Snogo. We'll get there tonight all right. You won't have to shut down."

★ ★ ★

ALL over the nation, plants, large and small, plants in the city, plants far off in the country, contributing to the war effort are wondering if the goods are coming through. Materials from here, a small part for an assembly from there, all moving on a schedule so close that should delivery fail, partial shutdown somewhere along the line is almost inevitable.

Lots of small plants and lots of communities are going to be thankful this year for Snogo. Snogos are going to break open many drifts for the movement of quantities of materials. Snogos are going to keep many production roads open.

★ ★ ★

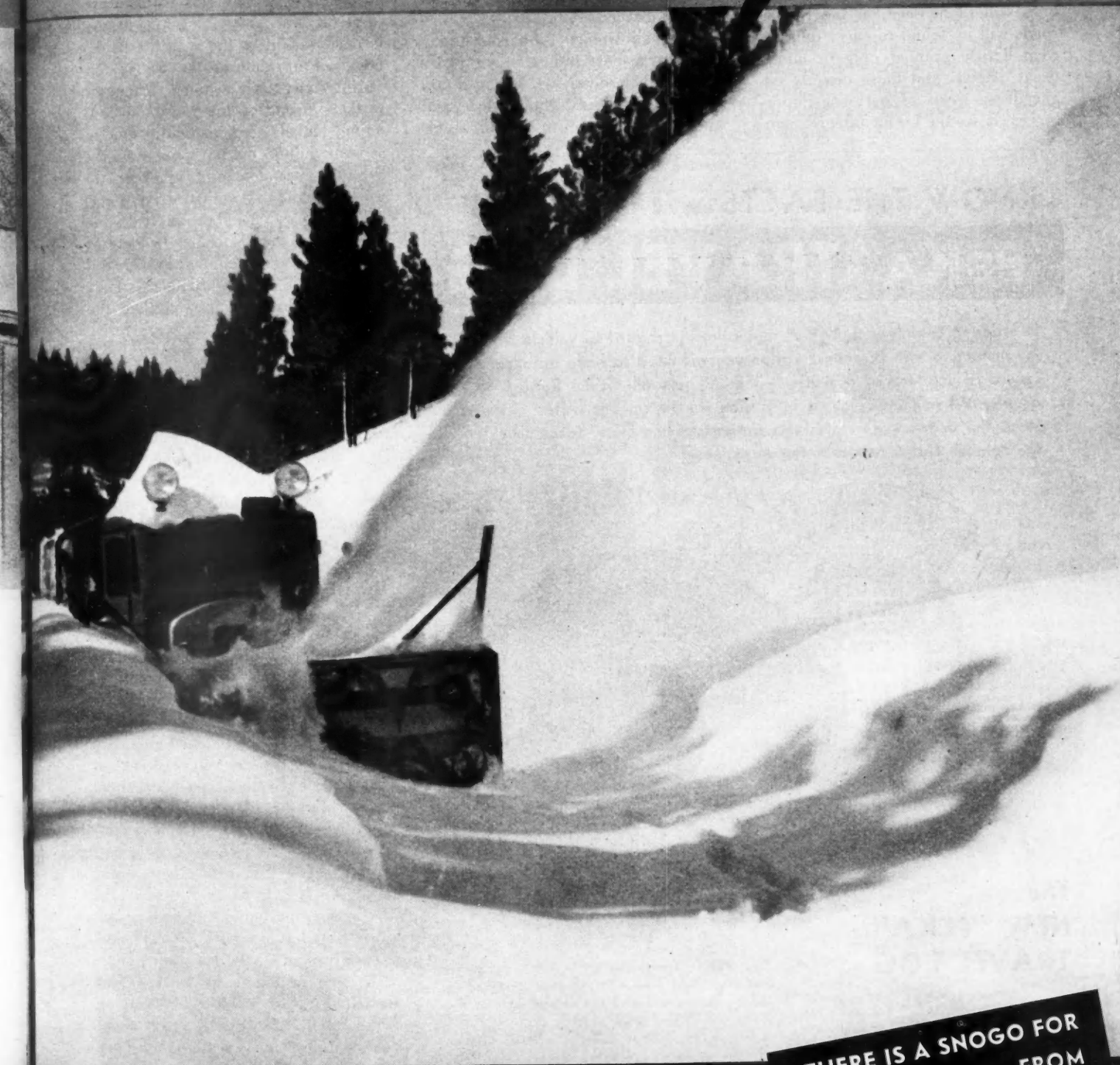
Someday a peace treaty is going to be signed and there will be tires and gasoline again. Then winter motor transport and winter motoring are going to be more of a part of everyday life than ever before. Winter traffic will be heavy and the driving public will require and demand real snow clearance—winter roads as open and safe as summer roads. Rural communities are entitled to and will want the better business that always comes with clear highways; and rural residents will want and ask for the safety and security that can only come with cleared roads.

Then it is going to be up to highway departments and county commissioners to deliver. Against that time let us tell you what Snogo means in winter highway safety.

KLAUER MANUFACTURING COMPANY, Dubuque, Iowa

Keep 'em Rolling

There Tonight!



SNOGO

*For
Complete
Snow
Removal*

THERE IS A SNOGO FOR
EVERY BUDGET—FROM
A 1½ TON TO THE
LARGEST FOUR WHEEL
DRIVE TYPE OF TRUCK

FEMALE LABOR IN GREAT BRITAIN

(CONTINUED FROM PAGE 84)

It must be remembered in this connection that all pleasure motoring is prohibited, and those few automobiles still to be seen on the British roads will be found to carry the new road license granted only to ministerial officials and those directly engaged on work of national importance. It would be an offence, pun-

ishable by heavy penalties, for such specially licensed private cars to be used for any journey not connected with official business. The licensee would be committing an offence if he drove his wife half a mile to the railway station, or drove a quarter of a mile off his direct route to call at his tobacconist's.

Thus all women employed today in the transport industry can justly regard themselves as engaged on work of national importance, and know that their own individual ef-

forts are bringing closer the day of complete victory for the United Nations. Indeed, nobody can doubt that such women are really doing vital work. The number of women engaged in the British transport industry is not publishable, being a government secret; but we venture to assert that when the actual figure is disclosed after the war, its greatness will be found astounding.

Not only are women transport workers proud of the work they are doing, but all of them readily put in as many additional hours as possible. By their keenness and readiness to work long hours, women drivers and mechanics quickly become valuable servants to the transport branch of the great war machine now in full operation in Great Britain. They take pride in their job, and on the wages and overtime rates in force, they are able to maintain a good standard of living and appearance.

The suggestion that this class of work would coarsen women has been proved false. Indeed, in her free time the woman mechanic has a spring in her step and a grace in her carriage that her sister in the factory too often lacks. There is among the women of a repair shop a camaraderie and enthusiasm that would be impossible in the stereotyped pattern of a factory.

The management of the average repair shop exercises a much milder discipline than is found in factory, store, or most other commercial undertakings. The women, if they have proved themselves capable, are left alone to get the vehicle back on the road in the least possible time. Many women who undertook the work reluctantly, rather than be conscripted into the Women's Services, now frankly tell you that they would not leave it even if they could. As one woman mechanic summed up her job, "I find it interesting work, and generally it is a very happy life."

Women mechanics and their mates invariably dress in bib and brace or coat-overalls, whilst drivers wear coat-overalls; and for these they are allowed, on application to the Clothing Department of the Board of Trade, an allowance of 10 clothing coupons per rationing period (at present six-monthly). In large establishments employing 50 or more mechanics, male and female, it is the

(TURN TO PAGE 90, PLEASE)

KNOW THE FACTS *with the NEW* "PEKA" TRAVEL LOG

In order to comply with O P A regulations in regard to vehicle speeds in connection with tire conservation you will need to have an accurate record of your trucks' activities—"PEKA" tells all! It's a Road Dictograph—When the vehicle is in motion the instrument writes; when it stops the driver writes. It shows actual starting time; takes notes on the number and duration of the stops, etc.



The NEW "PEKA" TRAVEL LOG

NOTES

- Time of start and finish of daily run.
- Actual time of deliveries.
- Distance traveled between each stop.
- Number of stops and their duration.
- Average speed.
- Total number of miles covered.
- Motor hours.

The "PEKA" Travel Log is the result of requests by large fleet owners to develop a recording device that would give the actual facts of the daily activities of their trucks.

Furnished in 12-24-72 hours recording, with or without a mileage counter. Charts are eight inches in diameter.

Guaranteed for one year.

Send for complete details—also information about our Dash Board Odometer, Hubodometer, Tachometer and Counters.

PAUL KNOFF

41-43 37th Street
LONG ISLAND CITY, N. Y.

SOMEONE'S GOT TO *Keep 'em Rolling!*

PATCHWORK PETE:

Wish I was out there in the Solomons with a gun 'stead of stayin' home here with a wrench and a pair of pliers.

T. P. TIM:

Yeah, I know just how you feel old-timer—but we put on OUR show back in 1918. They need the young, husky lads for the fighting today. You're worth more doing a good job at home.



• Many a motor mechanic feels just like Pete does—itches to get into the actual fighting—or thinks he might serve better by going into a defense plant. It's a question each man must settle for himself—but there are some things to remember—

America's traffic and transportation is vital to the war effort—it must not be paralyzed. Trucks, tractors, and defense workers' cars must be kept in service. The longer the duration of the war, the heavier will become the burden upon the skilled automotive and maintenance man to keep aging cars and trucks running.

Thompson Products faces much of the same problem. Normally, Thompson's volume was about 75% original equipment and replacement parts for cars, trucks, and tractors. Today, Thompson's big volume is in vital parts for planes, tanks, army trucks, torpedo boats—but to date with government approval we have been able to produce more automotive replacement parts than during many peacetime years.

Remember too, Uncle Sam is training thousands of young, ambitious men to become expert engine mechanics. They will be putting that ambition and skill to work when they return.

Doesn't it seem sensible and patriotic advice for older, established repairmen to stick to their job, doing the best maintenance work they know how and building for the day when competition in their field will be keener than ever?

THOMPSON PRODUCTS, INC.

Detroit • CLEVELAND • Los Angeles

Your TP jobber is doing his best to maintain an adequate stock of replacement parts. With the bigger repair jobs needed today, his machine shop can help you more than ever.

See Your
Thompson  **Products**
Jobber

FEMALE LABOR IN GREAT BRITAIN

(CONTINUED FROM PAGE 88)

common practice for the management to obtain these coupons for all their employees, and to pool them; and then to supply working top clothes to their staff as needed. Oftentimes the management supply and launder these garments without making any charge to their workpeople.

In the words of a manager, "Pro-

viding I retain the whole-hearted and willing cooperation of my male mechanics, and keep a sympathetic eye on my women employees, taking special care to see that in their enthusiasm they do not overwork or overstrain themselves, I can be confident that in a period of but a few months I will have a staff of female mechanics that can be relied on in any rush and in all circumstances."

Management has found it better to pay the full rate to females immediately on employment rather than

to offer them the smaller legal wage until proficient (the legal minimum being 80 per cent of the full rate for the first 13 weeks, and 90 per cent for the following 26 weeks). For in practice there are always a number of essential even though not highly skilled jobs that a willing trainee can do, and it is rightly felt by many managers that this justifies their full wage. It is now possible for any woman, providing she possesses the aptitude for this type of work, to secure employment in a repair shop at full rates immediately she starts.

The trade unions report that about 90 per cent of the female workers in repair shops belong to the unions, and this figure is daily increasing. When they enter the engineering world, women find among the men with whom they usually first work a lively interest in the many excellent activities of the Engineers' and Transport Unions, and under this influence readily join. In the majority of repair shops it is conditional that all employees take out their union card immediately they commence work.

The wages for female shop mechanics are: For those aged 18 to 21 years, 37 to 41 shillings (approximately \$7.40 to \$8.20) per week; over 21 years of age, 43 shillings (approximately \$8.60) per week, minimum, rising to 81 shillings (\$16.20) according to area and proficiency. The week is one of 48 hours. Overtime is paid at rate and a third; whilst double rate is paid for all Sunday work. Frank Coyle, of the Trade Union Congress, states that it is the general practice for operators to pay mechanics the full rates after six months; these rates being the same for women as for men, namely 81 shillings (\$16.20). Mechanics' helpers over 21 years of age earn a wage between the minimum 43 shillings (\$8.60) and the top rate of 81 shillings (\$16.20) according to their proficiency and value.

The wages paid to female drivers is governed by three scales for three classes of locality: firstly for Greater London, secondly for large provincial cities and towns, and thirdly for rural areas. The rate paid to workers in the first and second groups varies from 71 shillings 6 pence to 86 shillings 6 pence (approximately \$14.30

(TURN TO PAGE 92, PLEASE)



GALION

SHOWS
BELOW A FEW
CHARACTERISTIC
MODELS DOING
ACTUAL DEFENSE
WORK

GALION

THE GALION ALLSTEEL BODY CO. ★ Galion, Ohio, U.S.A.

No Waste Motion

THERE



Official U. S. Army Signal Corps.
from International News Photo

HERE



Fast Work Needed in Battle and in Your Shop

Trying unproven brake materials may keep trucks off the job of transporting America's war goods. American Brakeblok's Brake Lining Advisory Service helps you adapt one or more of three specialized types of linings to your exact needs; helps keep trucks on the road, saves shop time all around. Ask your jobber today or write us direct.



American Brakeblok Brake Lining is quickly available to you through the nationwide NAPA warehouse and jobber system.



Stopper the Pup is now appearing in national magazines; selling safe brakes and American Brakeblok Brake Lining to millions of readers.

American Brakeblok also offers you a comprehensive line of fan belts, straight and formed radiator hose, woven and molded clutch facings.

THE AMERICAN BRAKE SHOE & FOUNDRY COMPANY
American Brakeblok Division, Detroit, Michigan

American Brakeblok
BRAKE LINING

FEMALE LABOR IN GREAT BRITAIN

(CONTINUED FROM PAGE 90)

to \$17.30) per week for trained female workers over 21 years of age; those under 21 years receiving from 20 per cent to 40 per cent less. It is usual for the lowest rate to be paid. In the third group (that is, in the rural districts), the rates for over 21 years of age are 68 shillings to 78 shillings (about \$13.60 to \$15.60)

per week, whilst those under 21 receive from 20 per cent to 40 per cent less. All rates apply to a 48-hour week, excluding Sunday. Overtime is paid at rate and a quarter, with double rate for Sunday. Where the female driver is working away from home, a subsistence allowance is made, this being 7 shillings (\$1.40) per night in the second and third groups, and 8 shillings 6 pence (\$1.70) per night in the first group (Greater London).

It is the usual custom to pay these

full rates to all proficient drivers, although by law it is not necessary to do so until the female has been in the trade for 39 weeks. The legal wages payable to workers of less than 39 weeks in the trade is not less than 80 per cent of the foregoing rates. These rates apply equally to both drivers and driver's mates.

It is illegal to employ a juvenile of from 14 to 16 years of age for more than 48 hours in any one week, or a young person of from 16 to 17 years more than 54 hours. These must have one full day off out of every seven, this official ruling being applicable to both drivers and repair shop workers.

Perhaps we have not said so far very much about the driver's mates, but their position is generally regarded as being merely temporary; the mate of today being expected to be the driver of tomorrow. It is perhaps an anomaly that the same rates of pay should apply to both the skilled driver and the unskilled mate, but in actual practice the mate is generally much younger, and consequently receives a smaller wage. It is not uncommon for a man mate to accompany a woman driver, especially in cases where the heavier type of merchandise is carried. The unskilled but brawny man complements the skilled but less physically strong woman. In the handling together of a heavy package, it is often found that the woman facilitates the work by the use of her brain, herself generally discovering the easiest way to maneuver a bulky bale or awkward crate. It is really surprising the difficult and heavy packages such a team can handle, without the woman in any way being called upon unduly to exert her physical strength.

The railway systems of this country, with their customary conservatism, still largely adhere to horse-transport for deliveries and collections. Most of the railways employ two-horse covered vans, and today many of these are driven by women. It was at first an amusing sight in London streets to see these big horse-vans sometimes with a woman at the reins while a man mate sits on the packages in the back.

As regards general working conditions for women in British transport, these are not basically different from those governing women labor

(TURN TO PAGE 94, PLEASE)



Everything HINGES on lubrication...

We won't go into the "causes and effects" of lubricating oil failures. Engineers want to *know how* to prevent trouble and damage *before it happens*.

That's the VISCO-METER'S* job... and what a whale of a job it's doing on land and sea... watchdoggin' on the gasoline and Deisel engines that power many units of our transports, fighting machines and service equipment.

Uncle Sam enlisted the VISCO-METER* long before Pearl Harbor when, in several branches of government serv-

ice, the VISCO-METER* had proved its worth. No wonder then that today every VISCO-METER* we make goes with some gasoline or Deisel engine consigned for war service.

With the Peace, VISCO-METER* will again be available to those internal combustion engine manufacturers...automotive, marine and stationary...who will acquaint themselves with its decided advantages. There's nothing so convincing as a service record and it's not too soon to talk to a VISCO-METER* engineer.

VISCO-METER

CORPORATION

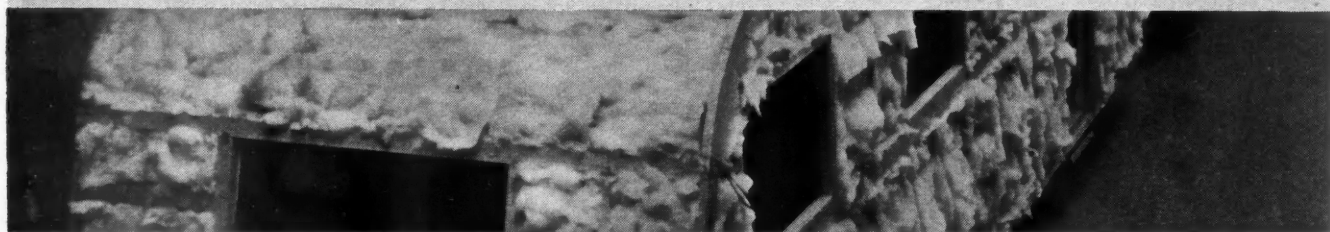
GROTE ST., BUFFALO, N. Y.

VISCO-METER: a 12-ounce precision instrument continuously indicating to the operator the viscosity (lubricating ability) of the crankcase oil while the engine is in operation.

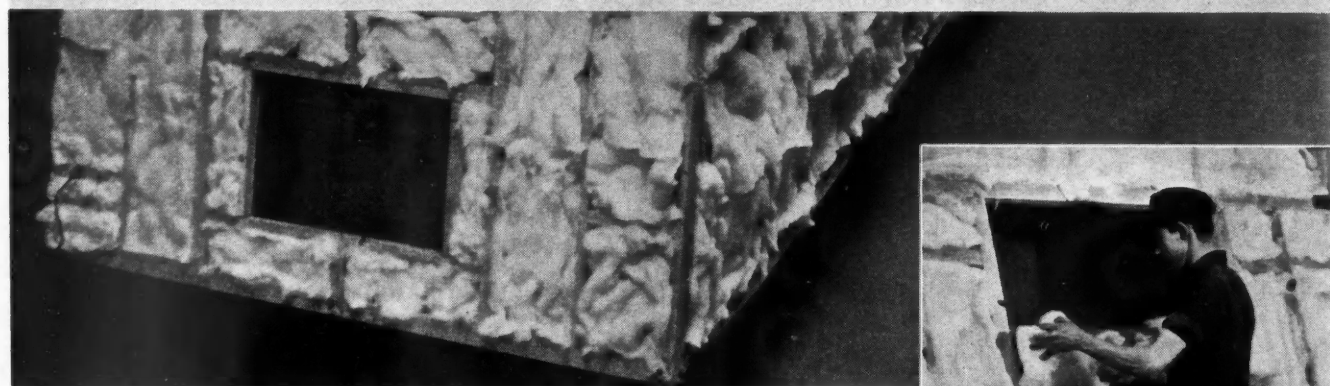
*Fully covered by U. S. and Foreign Patents



...LIGHT, EFFICIENT FIBERGLAS* INSULATION



SPEEDS CONSTRUCTION OF HOUSE TRAILERS



THESE HOUSE TRAILERS were built by the Continental Trailer Company, Chicago, to relieve critical housing shortages in defense areas. Lightweight, easily-applied Fiberglas in plain bat form helps to keep these temporary homes comfortable the year round.

ALL over the country, trailer towns are relieving critical housing shortages around war plants. It is important for the morale and health of war workers that these emergency homes be as comfortable as possible.

The Continental Trailer Company, Chicago, like many other leading trailer builders, uses Plain Bat Fiberglas to speed production and provide effective insulation. On floors, walls, and roofs, Fiberglas fully protects occupants of these Continental Trailers against extremes of winter cold and summer heat, yet adds little to the weight of the finished job.

This efficient, lightweight insulation is made of molten glass spun into soft threads. It is fireproof, rot-proof, verminproof, and is not affected by atmospheric moisture. In addition, its long, springy fibres

have permanent resilience which makes Fiberglas tend to expand instead of settle under vibration. As a result, it fully occupies all available space between body panels. A further advantage of Fiberglas is the soundproofing it affords.

Fiberglas is made in plain bat or in semi-rigid bat form and is widely used not only for trailers, but for all types of refrigerated truck bodies. Both forms are easily and quickly applied between body stakes and give long, highly satisfactory service without deterioration.

Whatever type of body you

make, you'll want full facts on Fiberglas. Write now for your free, illustrated copy of "Insulation for Trucks and Trailers." Armstrong Cork Company, Building Materials Div., 913 Concord St., Lancaster, Pa.



*Reg. U. S. Pat. Off. Owens-Corning Fiberglas Corp.

**ARMSTRONG'S
EQUIPMENT INSULATION**

LK CORKBOARD • FIBERGLAS* • TEMLOK

FEMALE LABOR IN GREAT BRITAIN

(CONTINUED FROM PAGE 92)

in any other industry either now or before the war. All repair shops employing women mechanics are required by law to provide them with adequate lavatory facilities, and where the number of women employees exceeds 50 officialdom can demand that a canteen be established, unless there are nearby facilities for obtaining

meals or the workers are able to go to their homes to eat.

As the war has progressed, conditions generally have become more arduous for workers and the official requirements of amenities have been slackened. In considering conditions, it must be remembered that today a woman who is persistently late in the mornings can be heavily fined or even sent to prison; that the worker who takes a day off without a permission is no longer faced with possible dismissal, but with a prison sen-

tence (she can no longer be dismissed!).

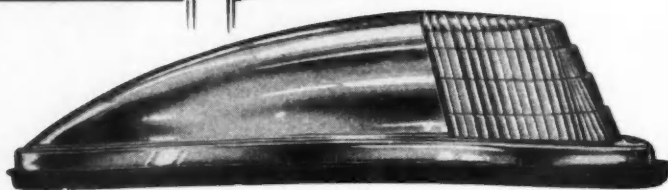
Many old pre-war niceties and distinctions have gone by the board in these strenuous days of 1942. The original system of reservation by trades has led to many anomalies that now make themselves painfully apparent. For instance in many trades the skilled worker was reserved, but his mate was conscripted into the armed forces with the ridiculous result in some trades that only skilled workers remain, and never a mate among them. By the powers granted to the government by Parliament, they can direct any person to do any job, provided he or she gets paid the same wages as he or she would receive doing his or her normal work. So many skilled workers had to be "demoted" to be the mates of their fellow craftsmen, although still drawing their full former pay. This absurd state of affairs is particularly marked in the building trades, where bricklayers, carpenters, plasterers, etc., have to do laborer's work, although receiving their full craftsman's pay.

We say again that to consider the conditions of labor in the British transport industry, one must visualize all the topsy-turvy background of industry and life generally here, after more than three years of the greatest war in history. Matters that would formerly have brought out a whole industry on strike, are today not even noticed—the workers are too busy getting on with the job, and are also intelligent enough to realize that their conditions are the best possible in the circumstances. The trade unions too have relaxed many rules and restrictions for the duration of the war only; and the criterion of all effort today is: To what extent will it promote the war effort?

In a land where old gentlemen are to be seen hobbling with their sticks along the pavements of our cities to deliver cablegrams, in the stead of the pre-war uniformed youths; where skilled craftsmen are to be seen cheerily doing laborers' work; and where energetic and successful business men are to be found held leashed on the red tape of their war-time jobs in the Civil Service; where bans on central heating are arbitrarily imposed by government so that the factory, office, or workroom is at a low

(TURN TO PAGE 96, PLEASE)

A CLEAR CASE FOR ARROW CLEARANCE LAMPS



Here's an outstanding deluxe ARROW unit that combines the greatest all around dollar value in this type of auxiliary lighting today. Built to exacting ARROW standards for performance and durability it offers further important design advantages. It is built to fit flat surfaces or to blend perfectly with modern body curvatures. Visible from both front and sides this ARROW streamlined unit may be used to conform with I.C.C. and State requirements on corner installations in place of two lamps. Furnished with red, amber or clear lens. We welcome inquiries both from manufacturers of new equipment under priorities as well as commercial fleet and bus line operators for replacement purposes. See your local jobber salesman or write direct to Dept. 163.

**ARROW PRODUCTS HELP KEEP
OUR ARMED FORCES ROLLING**



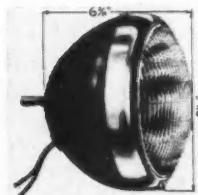
PLASTIC
REFLECTORS



STOPLIGHTS



OIL & ELECTRIC
FLARES



SEALED BEAM
HEADLAMPS



MARKER
LAMPS

ARROW SAFETY DEVICE CO., Inc.

MEDFORD, NEW JERSEY



TAKING CARE OF THE PRESENT

● Long range plans are essential—but not at the expense of our day-to-day responsibilities.

Here at K-D we try to maintain a common-sense balance between the future and the present.

Our long range plans call for constant research and development—of things we can't make now, but must have ready when the new day dawns.

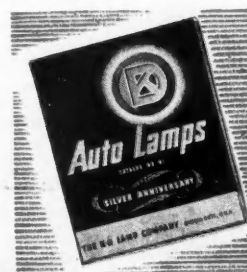
Right now our big job is to help keep the nation's trucks and trailers and buses moving safely through the night.

And one of the surest means of insuring your future and ours—is to take good care of these present insistent problems of the motorized transportation industry.

To this end we are increasingly vigilant on rules and regulations. Your jobber is being constantly supplied with the latest and most reliable data. He knows lights and lighting requirements—state and local regulations.

For the duration—and after—your K-D jobber is lighting headquarters.

This free manual will help you meet everyday lighting problems. Your jobber has it or you may have one on request.



THE K-D LAMP COMPANY • CINCINNATI, OHIO

K-D LIGHTING

*The Right Light
for the Right job*



FEMALE LABOR IN GREAT BRITAIN

(CONTINUED FROM PAGE 94)

temperature that would have cost the employer a big fine before the war; where sometimes, because a bomb has damaged a water-main or partially wrecked a building so that the lavatory of one sex is put out of commission, one finds that both sexes have to use a single lavatory (in such

cases the rule is that it is switched from males to females every fifteen minutes—boards reading "Ladies" and "Men" being changed every quarter hour)—in such a land, who is going to complain very much about conditions? Certainly no such grumble will come first from the women employed in the British transport industry.

END

(Please resume your reading on P. 32)

HOME-MADE RACK BOOSTS PAYLOAD

(CONTINUED FROM PAGE 34)



Fig. 2. Close-up of ladder and rack support

in. apart and attached to three cross pieces, make up the bottom, or floor, of the rack. Three rows of $\frac{3}{8}$ in. conduit pipe are used for the upper section. A bending bar, made in our shop, was used to form the round corners, which shape is best suited for carrying laundry bags. The pipe ends are welded together to form a smooth, continuous length. Eight $\frac{1}{4}$ x $1\frac{1}{4}$ in. steel strips are welded to the pipes. They serve as spreaders and braces. One end of each brace is bent at a right angle to form a foot which is fastened to the floor. Fig. 1 shows these details clearly.

The base consists of two 3 in. boards placed across the width of the roof, about 16 in. from each end. The rack is attached to this base with wood screws. The base boards are held in place at each end by a special, inverted U-bracket equipped with two vacuum cups. This saves drilling holes in the roof of the truck. While the vacuum cups hold firmly, a fabric strap also is used at each end of the base boards to provide greater rigidity. It takes care of side sway, espe-

(TURN TO PAGE 98, PLEASE)

We live largely by

MOTOR TRUCKS

WHICH HAUL

70% OF OUR CATTLE
34% OF OUR SHEEP
24% OF OUR MILK
50% OF OUR VEGETABLES
33% OF OUR BUTTER

Eberhard

- HINGES
- LOCK HANDLES
- LATCHES
- DOOR IRONS
- DOOR CONTROLS
- SEAT IRONS
- LOCK HANDLES
- SEAT PEDESTALS
- REFRIGERATOR LOCKS
- PANEL DOOR LOCKS
- VAN BODY LOCKS
- SLIDING DOOR LOCKS
- LADDER HOLDERS
- ETC.

Consider also the vast quantities of war materials that are being moved by trucks.

Truly trucks are vital—to our daily subsistence—and to our continued existence as a free nation.

There is satisfaction in knowing that a large percentage of our domestic trucks and thousands of war vehicles are more efficient and serviceable because of Eberhard products.

Today, Eberhard is serving the war effort in every possible way—improving and expanding various lines—and looking forward confidently to the rendering of even better service to the trucking industry when the world returns to normal activities.

EBERHARD *Long Run*

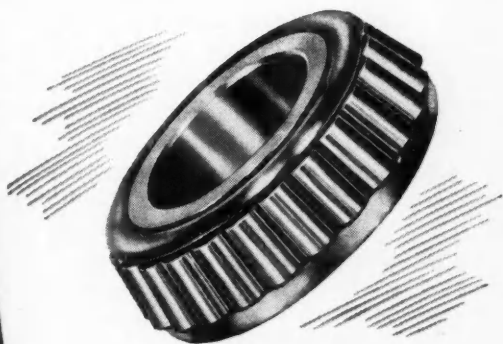
TRUCK BODY FITTINGS

EBERHARD MANUFACTURING CO.

Division of the Eastern Malleable Iron Company • CLEVELAND, OHIO

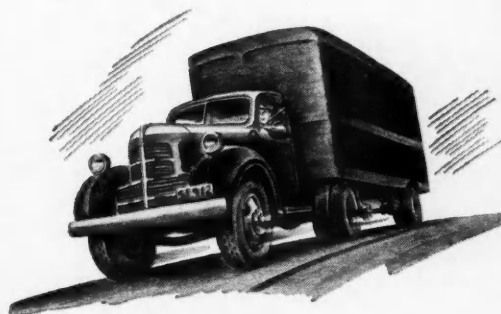
MORE ROLLS

around the raceway . . .



MORE MILES

on the highway . . .



"Keep 'em Rolling"

SAYS O.D.T.

The order of the day is Preventive Maintenance. Here's how to make anti-friction bearings last longer:

- 1 Inspect and lubricate at regular intervals.
- 2 Use good lubricant.
- 3 Clean housing thoroughly when installing.
- 4 Check that the bearings are properly adjusted.

★ Rolls are the "life line" of a tapered roller bearing. The more rolls to carry the load, the more service and life you may expect from that bearing.

Size for size, Tyson Cageless has *more* rolls—30% more, averaged throughout the entire line. The Tyson raceway is completely filled with load-carrying rolls. This means greatest capacity possible,

longest bearing life, maximum rigidity.

Tyson "All-Rolls" Bearings are interchangeable with other tapered roller bearings. Part numbers are the same. True, the extra rolls and forged cones and cups mean added manufacturing costs, but Tyson Cageless costs you no more. Next time, ask for Tyson Cageless. It's a Better Bearing.

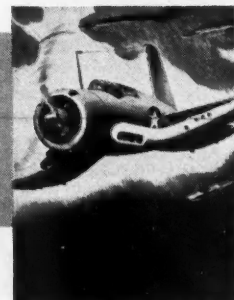
TYSON BEARING CORPORATION, MASSILLON, OHIO

Cageless FOR HARD SERVICE • Cage-type FOR REGULAR SERVICE

Tyson

**HEAVY-DUTY BEARINGS AND
PRECISION AIRCRAFT PARTS**

In addition to bearings for Army and Navy guns and essential automotive and industrial uses, Tyson makes precision parts for America's fighting planes.



HOME-MADE RACK BOOSTS PAYLOAD

(CONTINUED FROM PAGE 96)

cially when the vehicle turns corners with a full load in the rack. Each strap is fastened to the vacuum cup bracket, on the one end, and to the top drip molding, by means of a grip hook, at the other end.

The ladder is made from the same $\frac{3}{8}$ in. pipe, bent only at the top to meet the bottom pipe of the rack to

which a nipple is welded. The ladder and rack are joined with a union to permit separation and removal, if ever necessary. The ladder's five rungs are made of the same material, welded in position. The lower end of the ladder is fastened, by means of two other unions, to two nipples in standard pipe floor bases bolted to the running board. As shown in Fig. 2, the ladder is mounted on the right side, back of the door.

A close-fitting canvas storm cover completes the unit. The weight of

the complete unit is 149 lb. The average weight carried in the rack is about 600 lb.

As a result of war conditions, we have been obliged to make other basic changes in our operation. For example, a new program introduced in our maintenance includes the employment of a special service man to take care of our tires. We never handled our own tire repairing up to this time. This man checks all casings for gravel, cinders, nails and all sorts of foreign particles which, if allowed to remain in the treads, may cause serious damage. He repairs punctures, using cold patches for this job, and fixes blown-out tubes, using a tube plate vulcanizer on the larger repairs. He inspects tires for recaps, and injured casings for spot and section vulcanizing. This type of tire work is sent out to vulcanizing shops.

The amount of glass, sharp gravel, stones and many other foreign articles picked out of our tires convinces us completely that, heretofore, our tires have been abused out—not worn out. With extraordinary care we can make them do treble service, assisted with recapping.

In this connection, we demand a limited top speed of 30 m.p.h. in suburban areas, not more than 35 on the open road. This is not merely a company rule that can be disobeyed—we use governors. All trucks are equipped with them to insure a rigid adherence to this speed rule.

We make our own governors, using 18 to 20 gage metal, perforated with $\frac{1}{8}$ to $\frac{1}{4}$ in. holes, size of perforations depending on the unit. They are not interchangeable, as carburetors on each truck are different.

Another big help in preserving our tires is the use of tire chains on rear wheels when the streets are slippery because of snow or ice. Without them, considerable skidding is unavoidable, even at the low speeds. Skidding on the snow or ice to a point in the road that is bare is a severe treatment to tires, wearing tread stock unduly. Tire chains obviate this danger. Every one of our 42 trucks now carries a pair of chains in the winter season. First, to prevent accidents, secondly to save tires and brakes.

END

(Please resume your reading on P. 35)



Chicago APEX WORLD'S FINEST FOOT POWER RIVETING MACHINE

Relines brakes—refaces clutches with original factory accuracy. Handles any size job from the smallest to the largest—passenger car, truck, bus, army and airplane brakes using tubular rivets. Truck fleet operators find that this heavy, powerful relining machine does the job better, quicker and with less effort. Delining, drilling, countersinking, riveting, straightening and grinding is accomplished without the operator leaving the machine. Actually, it's a complete relining-refacing department. Every known labor saving feature is incorporated in its design. Write for catalog of the complete "Chicago" line.

TESTED AND APPROVED FOR
U. S. ARMY AND NAVY USE
QUICK DELIVERY!

CHECK THIS LIST OF FINER FEATURES.

- ★ **SET BACK DELINER**... Full vision clearance. Motionless, adjustable knockout punch. Built-in old rivet collector.
- ★ **DEEP THROAT**... For easy working.
- ★ **ADJUSTABLE ANVIL**... Quickly set for any length rivet.
- ★ **LOW HEAD**... Specially designed to facilitate work even on small diameter bands.
- ★ **SHOE STRAIGHTENERS**... Built in.
- ★ **DRILLING UNIT**... Two-speed, V-belt drive, no hand pressure required, foot operated.
- ★ **GRINDING UNIT**... Fully machined, large table, $\frac{6}{16}$ " cushioned abrasive drum.
- ★ **CAPACITY**... Up to $\frac{1}{4}$ " diameter tubular or solid rivets.
- ★ **POWERFUL**... New toggle lever design.
- ★ **QUIET**... No noisy clatter.

Chicago Rivet AND MACHINE CO.
9610 W. JACKSON BLVD., BELLWOOD, ILL.
(Chicago Suburb)



These men are held personally responsible for mileage in these days of rubber rationing—That's why they like to ride on McCreary SUPER SERVICE and SUPER TRANSPORT Tires and get the 20 per cent or more extra trouble-free miles built into these casings.



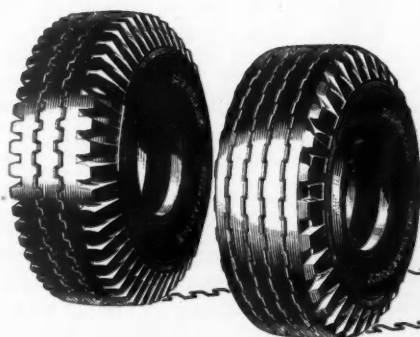
Take a big fleet like Shirks Motor Express Corporation, for example. Serving Delaware, Maryland, Pennsylvania, New York and Ohio as common carriers hauling important war materials almost exclusively, this fleet is 85 per cent equipped with McCreary Tires. Says R. Robert Posey, President of Shirks, "We have used McCreary Tires since 1931. We have found them superior to any others, including those for which we have paid premiums of \$100 per set of four. We have tested the finest and most expensive tires made, but McCreary Tires are far superior for our transport work".

Stand by your Recapper!

Your recapper, who has been engaged in the business of conserving rubber for years before Pearl Harbor brought his trade into the limelight, is your best friend. McCreary always selected as distributors those who can render a complete tire service. We in the rubber industry can well appreciate how fortunate it is today—particularly for the large fleet operator—that the skilled recapper, backed by years of experience, is ready to put his "know-how" at the disposal of a rubber-hungry America!

That extra McCreary mileage is built right into the carcass and tread—that's why these tires take more recaps and why they deliver 80 per cent of the original mileage after each recapping.

McCREARY TIRE & RUBBER COMPANY
INDIANA, PA.



McCREARY
"Built for Longer Service"
TIRES

9 FACTORS IN CYLINDER WEAR

(CONTINUED FROM PAGE 35)

average engine temperature is well below boiling, the cylinders are likely to distort. Aside from the cylinder wear which will develop, the best of piston rings cannot function properly in a distorted cylinder. The cooling system should be kept clean for long cylinder wear.

Breather

Some engines are equipped with crankcase ventilators, or breathers, designed to withdraw gasoline and water vapors which form in the crankcase before condensation occurs. This is accomplished by circulation of air drawn into the crankcase through the breather. Under normal operating conditions, gasoline and water vapors form in the crankcase. These vapors, under certain conditions, may cause etching of

highly-finished bearing surfaces and dilution of oil, unless withdrawn from the crankcase before condensation occurs. Although the air entering the crankcase goes through a cleaner element, and therefore is comparatively clean, the breather must be thoroughly cleaned at regular intervals. If the breather is permitted to remain in a clogged condition, fine particles of dust and other abrasive matter will enter the crankcase, and cause considerable damage.

The breather should be removed and washed in gasoline at least every 1000 miles. After the element has been washed, blow dry with compressed air and dip in a light engine oil. Breathers in vehicles operating in dusty or sandy areas should be cleaned more often than those operating under more favorable conditions.

Manifolds

Many manifolds are designed with valves which control the heat either by manual or thermostatic action. The valves should be regulated to compensate for seasonal variations in atmospheric temperatures. Improper manifold temperatures are likely to cause crankcase dilution and eventually abnormal cylinder wear.

Lubricating Oil

When running at high speeds on a warm day, the oil in an engine has a tendency to reach very high temperatures. As a result, the oil thins out and does not provide proper lubrication. When running slow on a cool day, the oil does not reach a high enough temperature, and the oil cannot properly penetrate the upper cylinder. Oil of correct viscosity is essential. An ideal oil would be one which maintains a practically constant viscosity over a large temperature range. Engine oils of high quality should be used to prevent undue cylinder wear. The oil should be pure and contain no corrosive elements. Operators should give more attention to engine oil specifications when purchasing oils.

Dirty Crankcase—An accumulation of dirt and grit in the crankcase will cause cylinder wear. To prevent this, the oil should be drained and replaced with new oil at regular intervals. Even though the oil is changed regularly, dirt and sludge are likely to accumulate which will not drain

(TURN TO PAGE 102, PLEASE)



THESE LITTLE THINGS ARE WINNING THIS WAR

American Shells, plenty of them, are thundering and screaming the American answer to the treachery of Pearl Harbor. American Trucks, many makes of them, are seeing to it that these shells get to the battle fronts all over the world, on time. American Tools, like the K-D Tools shown here, are keeping these trucks fit and fast, and hustling to feed the guns. *These little things are winning this war!* K-D Manufacturing Company, Lancaster, Penna., and Hamilton, Ontario.

K-D TOOLS

TOP, K-D 600 Valve Lifter, adjustable, tempered jaws.

CENTER, K-D 900 Hi-Offset Lifter, ideal for use under fenders. Auxiliary jaws shown ready for use.

RIGHT, K-D 115 Ignition Point Adjusting Tool, does the job right in the distributors.

K-D TOOLS are still available for repairing essential cars and trucks. See your Jobber or write the factory.

K-D TOOLS
The Hustlers for Your Toolbox!

ARE YOU GETTING VALVES OF THE PROPER HEAT-RESISTING QUALITIES THAT YOU ARE ENTITLED TO—UNDER FEDERAL LIMITATION ORDER #L-128?



THIS Limitation Order puts all of your automotive vehicles into various classifications and specifies the chrome content of valves for each group.

If you want maximum valve efficiency, send us a list of your equipment, using the convenient coupon below. We will be glad to recommend the proper valve for each unit in your fleet. Be sure to indicate make, model and present *gross weight rating* for each truck and bus so that you may get valves of the proper chrome content. For Victory keep them rolling longer.

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Valves... Pistons... Piston Pins... Cylinder Sleeves... Engine Bearings...
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Dear Sirs: I am attaching list of make, model and gross weight rating for each unit in my fleet. Please give me your valve recommendations under Limitation Order #L-128.

Name.....
Company.....
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City.....State.....

9 FACTORS IN CYLINDER WEAR

(CONTINUED FROM PAGE 100)

out when the oil is changed. The best way to remove all the dirt and grit is to remove the oil pan and clean it and the upper crankcase thoroughly. The cost of this operation will be well repaid in longer cylinder life.

Oil Filters

An oil filter of proper design and capacity is essential in prolonging the life of a cylinder block and other parts of an engine. The filter element removes particles of dust, carbon and other foreign matter from the oil stream. Oil filter cartridges should be renewed whenever the oil appears dirty on the oil level indicator. Periods of changing cartridges depend, of course, upon severity of engine operation. Failure to renew a cartridge at the proper time will greatly accelerate cylinder wear.

Air Cleaners

The presence of dirt, grit or abrasive in an engine will cause rapid

wear. Abrasive materials can enter into the engine through the carburetor while the engine is operating, and it is of vital importance to equip the carburetor with an adequate air cleaner. If the cylinders of a number of worn engines be examined, it will be noticed that in many cases the excessive wear is opposite the intake valves. This is caused by unvaporized gasoline and dirt coming into the cylinder and striking the cylinder wall at this point.

Standard air cleaners have elements which are pre-oiled; they should be cleaned and re-oiled at regular intervals, at least every 1000 miles, or more often if conditions of operation warrant.

Oil-bath type air cleaners should be cleaned and the reservoir filled to the level indicated with the same grade of oil as used in the engine. This should be done every 1000 miles, or more frequently under severe dust conditions.

Unless air cleaners are cleaned and oiled periodically as service conditions require, they will not function properly, and in some instances, actually aggravate the condition which they are designed to prevent.

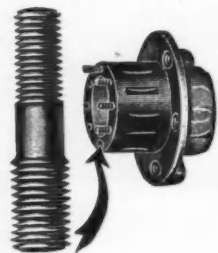
Fuel Mixtures

A rich fuel mixture at regular driving speeds will cause cylinders to wear abnormally. The wet gasoline will adhere to the cylinder walls, especially if the engine runs cool, and will thin out the lubricating oil so that it is ineffective in eliminating friction and wear. The correct fuel mixture depends primarily on the carburetor adjustment, although an inefficient manifold will cause trouble also. Many engines have automatic manifold temperature control which aids greatly to prevent raw gasoline from reaching the cylinders.

Operation

Excessive Choking—It is common knowledge to all fleet operators that excessive choking when starting is detrimental to an engine, besides being wasteful of fuel. Raw, unvaporized gasoline will not burn completely and the remainder will wash down the oil film on the cylinder wall. A cool engine does not obtain proper lubrication until it has run long enough for the oil to reach the normal temperature and viscosity. Therefore, it is imperative to use the choke (TURN TO PAGE 104, PLEASE)

Short Cuts for Fast Service



Champ-Items No. 407 Oversize and Standard Rear Wheel Studs, for cars and trucks — used when threads are stripped or stud is broken off; or when wheel flange holes and axle flange holes are worn. Made of high tensile strength steel. (See your Jobber for lists of sizes and makes). List price..... 20c to 35c each

Champ-Items No. 949 Self-threading Oversize Drain Plugs for all popular makes of cars and trucks. Here is a real life-saver when drain plug is stripped or lost.



(Pat. No. 2,257,441)

No. 949A— $\frac{1}{2}$ " Oversize for Chevrolet, Pontiac, Oldsmobile, and GMC truck List 30c each

No. 949B— $\frac{5}{8}$ " Oversize for Buick, Hupmobile, and Packard..... List 35c each

No. 949C— $\frac{11}{16}$ " Oversize for Oldsmobile, LaSalle and GMC truck..... List 35c each

No. 949G— $\frac{3}{4}$ " Oversize for Ford, Studebaker, and Cadillac List 35c each

Champ-Items No. 951 Radius Arm and Brake Silencer for Chevrolet knee-action models 1934-38 and Pontiac 1934-36. Eliminates all rattle and prevents further wear by applying constant pressure to arm and brake plate. Can be installed in a few minutes. (U. S. Patent No. 2147178). List price.....\$1.60 per pair



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CAN YOU *Hear* WEAR?

You bet you can . . . every mechanic knows that noise is almost certain to mean wear—especially is this true of gears. Unless gears are “mated”—accurately matched to a perfect mesh—they fight each other and noise is a natural consequence—extra wear certain.

Fuller Transmissions are quiet. Note how smoothly you can shift from one speed to an-

other. The driver doesn't have to “fight the gears” or learn tricky shifts. It makes his job a lot easier—reduces fatigue—and most important of all assures longer gear life.

Let your truck dealer tell you why

Fuller Transmissions are standard on so many nationally recognized trucks.



FULLER MANUFACTURING COMPANY • KALAMAZOO, MICHIGAN

9 FACTORS IN CYLINDER WEAR

(CONTINUED FROM PAGE 102)

as little as possible. It is better to idle an engine until it is warm rather than start off immediately with the choke in operation. Proper use of the choke will help to retard cylinder wear to the minimum.

Acceleration—In order to provide quick getaway, many carburetors are

equipped with acceleration pumps. When an engine is speeded up the pump forces a quantity of raw gasoline into the intake manifold. During the winter months the raw gasoline will not burn completely and the lubricating oil on the cylinder walls will be washed down and diluted. For this reason the cylinders may show excessive wear. In most cases acceleration pumps are provided with an adjustment so that the flow of gasoline can be adjusted to meet climatic conditions. It is important

that this setting be changed for summer and winter driving.

Drivers should be cautioned against the habit of pumping the accelerator pedal when not necessary, as this practice will greatly increase cylinder wear, due to the conditions stated above.

Driving Overheated Engines—

Every operator knows the danger of continued running of an over-heated engine. Even though the pistons do not seize, the cylinders will wear due to excessive heat and friction. Excessive heat will burn the oil film off cylinder walls, and the piston rings will freeze in the groove and allow blowby. Blowby, of course, will further increase the temperature of the pistons and cylinder walls, and aggravate the condition.

Maintenance

Cylinder Finish—The effect of cylinder wall finish on piston rings, pistons and cylinder wear is well known to fleet operators. Roughly finished cylinders must wear to the smooth polished surface that develop after a few hundred miles of running. The rough projecting parts of the newly finished surface are worn down or broken off. In some cases the rough surface holds the particles of abrasive which cause wear if not removed. The rougher the surface, the deeper are the microscopic pits. Thus the cylinder will wear more and at a faster rate.

An engine runs at its peak efficiency when it is worn in, which means that all the bearing surfaces, including the cylinder, have worn to a smooth, mirror-like finish. During the wearing in process the small irregular particles of the surface wear off and, if they remain in the engine, are likely to act as an abrasive and wear out parts of the engine including piston rings and cylinders. Therefore, it is reasonable to assume that if the cylinders are initially given a smooth, mirror-like finish that the difficulties of the wearing-in period will be eliminated. Reconditioning tool manufacturers have developed finishing methods which are designed to produce such finishes.

Cleaning Engine—Some repair operations require the use of abrasive material which if left in an engine will cause excessive wear. Be-

(TURN TO PAGE 106, PLEASE)



Barrett Says:

TO WIN THIS WAR

Transportation MUST

"KEEP A ROLLING"

Because our first obligation is to the armed forces, the supply of Barrett Brake Service Equipment for truck, bus and fleet operators is limited, and can be furnished only where the required priorities exist. But, in order to help you "Keep 'em Rolling," we have created new life in our repair service department.

REPAIR
SERVICE



Above is illustrated a partial view of our enlarged service repair department. If you have a brake drum lathe, or other brake service equipment that cannot be replaced and is in need of repair, write us for a reconditioning estimate. We will make every effort to help you in prolonging the life of your present equipment.

The Famous

BARRETT BRAKE DOKTER

Hundreds of these heavy-duty Barrett Brake Dokters are now in service, saving brake lining and insuring trouble-free brakes for the Armed Forces and Fleet Operators.



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BRAKE DOKTER
MODEL
B-120-A**

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TESTS SHOW HOW



"PLUG-CHEK" INSPECTION SERVICE

WORKS TO SAVE GAS...IMPROVE PERFORMANCE



Tests made by the American Automobile Association on "Plug-Chek" Inspection Service is

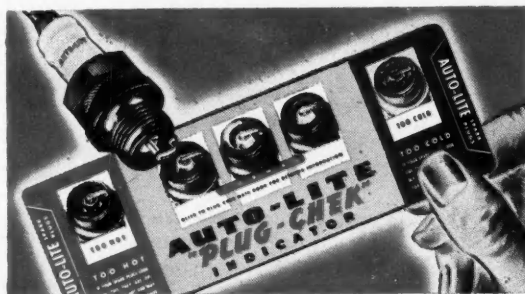
of special interest to bus and truck operators these days because of the practical and patriotic need for improved operating economy. The way to this saving is shown in a series of tests on a group of average cars in which the average fuel saving resulting from changes made was 7.1% with a high of 12.28%.

The report shows how "Plug-Chek" Inspection Service helps mechanics spot electrical and other troubles as revealed by spark plug condition. It proves the soundness of the statement mechanics have been making coast to coast that, "Plug-Chek" is one of the greatest service tools ever given the industry." You owe it to yourself to give "Plug-Chek" a thorough trial in your maintenance department.



AAA REPORT SENT FREE ON REQUEST

Your name and address will bring a "Plug-Chek" Indicator and Data Book together with details of the test made under the supervision of the AAA Contest Board. Write today to the Electric Auto-Lite Company, Merchandising Division, Toledo, Ohio, or Sarnia, Ontario.



Color and condition tell if spark plugs are operating "too hot," or "too cold," or just right. Matching spark plugs with those illustrated on the "Plug-Chek" is the first step in restoring new life to spark-worn engines.



AUTO-LITE SPARK PLUGS

IGNITION ENGINEERED BY IGNITION ENGINEERS

IN ITS 26 GREAT MANUFACTURING DIVISIONS, AUTO-LITE IS PRODUCING A LONG LIST OF ITEMS FOR AMERICA'S ARMED FORCES ON LAND, SEA AND IN THE AIR

9 FACTORS IN CYLINDER WEAR

(CONTINUED FROM PAGE 104)

fore assembly all abrasive material should be cleaned from the engine. This is especially necessary when the cylinders and valves are reconditioned. When cylinders are bored or honed means should be provided to carry abrasive particles and chips away from the engine. After the cylinders are finished they should be washed thoroughly with soap and

water to remove microscopic particles of abrasive and metal.

When the engine is down for any operation which involves the disassembling of the major parts, this opportunity should be taken to clean the engine of accumulated dirt and grit. An engine that is kept clean internally will do much to prolong the life of cylinder blocks and other vital parts.

Engine Parts—In many cases cylinder wear can be traced to misalignment of engine parts. Wrist pins may

be fitted so that they are not square with the pistons. The connecting rods may be bent and twisted. The crankshaft may not be lined up correctly with respect to the cylinders. In cases where the cylinder block is bolted on the crankcase and not integral, trouble can be expected if these two units are not aligned with great care.

Tightening Engine—The excessive tightening of studs, bolts, nuts and cap screws in an engine will harmfully distort cylinder blocks, cylinder heads, connecting rod bores, crankcase main bearing bores and many other engine parts. They should always be tightened with a tension wrench to the engine manufacturer's specifications.

Tension specifications for use with tension wrenches will be found in the April, 1942, issue of *COMMERCIAL CAR JOURNAL*.

END

(Please resume your reading on P. 36)

ENGINE BEARING REPLACEMENT

(CONTINUED FROM PAGE 38)

or a cadmium alloy bearing in an engine originally built with the heavy duty bearings. If this substitution is necessary, the operator must expect reduced bearing mileage or he must reduce the severity of his operation.

Lead base babbitts, as used by specialist engine bearing manufacturers, can be expected to show mileage superior to that of tin base babbitt bearings providing the babbitt thickness does not exceed .035. If the babbitt thickness ranges between .035 and .060 in., the performance of lead base and tin base babbitt can be expected to be on a par. If the thickness of a lead base babbitt is in excess of .060 in., its performance will probably be inferior to that of tin base babbitt, unless the severity of the operation is reduced.

Crankshaft

When crankshafts have been reground to the limits established by available undersize bearings, it is obvious that any further reduction in diameter is impractical because of lack of suitable bearings and, what is perhaps of greater importance, the

(TURN TO PAGE 108, PLEASE)



GENERAL SHERMANS'
Start IN LIFE!

When the first General Sherman tanks came off the production line, on hand was the "BENDIX" Drive to give them their start in life. And this tough little unit has been on the job ever since.

This great wartime record is a natural follow-through of Bendix's remarkable peacetime record for swift, sure starts. It's reason why, moreover, the "BENDIX" Drive is unsurpassed in replacement service, too.



ECLIPSE MACHINE DIVISION

The "BENDIX" Drive is a vital member of "The Invisible Crew"—the precision equipment built by 25 Bendix plants from coast to coast and serving with our fighting crews on every front.



They Don't Come too Big for Thermoid

Lyman Timber Company
HAMILTON, WASHINGTON

November 1, 1942

The Thermoid Company
San Francisco
Calif.

Gentlemen:

Since we have been using Thermoid Brake Blocks, we have had such good service, that we felt a word to you would be in order.

Our operation is very unusual inasmuch as our fleet of logging trailers are so large that they cannot be operated on public highways. It is easy to understand, therefore, that to hold one of these units under control when loaded with twenty-five to thirty-two tons of fresh cut timber, down the side of a mountain, is a tough assignment. Grades running from eight to twelve per cent are common and drum temperatures run so high that water must be constantly sprayed on them to keep them cool enough to do their job.

Our experience with Thermoid indicates no friction fade and a wear factor far superior to the average under the conditions.

We are also using Thermoid Fan Belts, Clutch Facings and Radiator Hose on our fleet, and Thermoid Industrial Roll material on our winches and donkeys with equally satisfactory results and highly recommend Thermoid Products for any of the services for which they are designed.

Very truly yours,
LYMAN TIMBER COMPANY

By *A. H. Liskness*

Is your braking problem *this* tough? If it is, you certainly need Thermoid! If it isn't, think of the extra margin of safety and service you get from Thermoid Brake Linings. Try Thermoid on your toughest units—you'll soon have them on the rest. They are "Right the first time".

Thermoid

Custom-Built Brake Lining Sets • CBB Sets
Thermo-blocks for heaviest duty

★ THERMOID COMPANY ★ Trenton, New Jersey ★

ENGINE BEARING REPLACEMENT

(CONTINUED FROM PAGE 106)

shaft may be dangerously weakened by additional regrinding.

Since it is improbable that new shafts will be freely available for replacement purposes, it may be possible to restore the crankpins and journals to their *original diameters* by metal coating.

Replacement main bearings are frequently installed without removing

the crankshaft from the engine and, since it is impossible in most engines to reach the crankshaft journals with a conventional micrometer, the determination of the journal size and bearing diameter has often been largely a matter of guesswork. This guesswork can be eliminated by the use of a special crankshaft caliper. This caliper is suitable for use in all engines in which the main bearings can be removed and replaced without dis-assembling the crankshaft. With the old bearings rolled out, it is pos-

sible to reach in with the caliper and obtain the journal size.

The actual dimension is finally taken with an inside micrometer, measuring the distance between the contact pads of the caliper. Take measurements at enough points on each journal to find the largest diameter and to establish the amount of wear and associated out-of-roundness.

Crankpin sizes can be obtained easily with the crankshaft caliper or with outside micrometers. It is absolutely necessary that the crankshaft journal and crankpin sizes be established accurately so that replacement bearings can be supplied which will have the correct oil clearance. If the crankshaft is out-of-round, bearings must be obtained which will have proper clearance over the largest diameter.

However, as a general rule, if the main journals are more than .003 in. out-of-round and the crankpins more than .002 in., the shaft is unfit for further use and must be reground. These out-of-roundness values are selected as a compromise between the ideal condition of true roundness with associated maximum bearing mileage. Certain engine manufacturers recommend regrinding when out-of-roundness of .0015 in. exists.

A crankshaft worn to the extent that the bearing surfaces are ridged and scored is unfit for use and must be reground. After regrinding, the ground surfaces must be finally lapped and polished to obtain a satisfactory smooth finish. A ground finish only is considered too rough and will result in a high rate of both shaft and bearing wear.

The crankshaft must be in true alignment and free from warp and distortion. The journals are readily checked for alignment in V-blocks and a dial indicator is used to determine if the shaft is true.

Crankcase Assembly

For use with precision insert (interchangeable) main bearings, the crankcase bearing saddle bores must be round within .002 in. and in true alignment lengthwise. If the crankcase has become bowed so that the centerline of the main bearing saddle bores becomes warped, a straight crankshaft will be thrown out of alignment and heavy and false loads imposed upon the main bearings, particularly toward the center of the

(TURN TO PAGE 110, PLEASE)

Governors

provide vital protection

When you equip your fleet with Hoof Governors you have accomplished three things:

First . . . you know that no vehicle under your supervision is exceeding the war time speed limit.

Second . . . you have taken the first and most important step to get the longest service out of your vehicles and the most mileage from your tires.

Third . . . you are enjoying tangible savings, accomplished only through controlled speed, that will pay for those governors—generally within 60 days.

SEND TODAY FOR GOVERNOR MANUAL F-542

SAVE GAS	13.5%
SAVE OIL	26%
SAVE TIRES	22.6%
SAVE BRAKES	29.2%
SAVE ENGINE REPAIRS	32%
SAVE ACCIDENTS	31%
SAVE INSURANCE	16%

Average savings of 200 operators
... USING GOVERNORS

★

HOOF PRODUCTS COMPANY . . . Chicago, Ill.



HOOF GOVERNORS



LABORATION ENGINEER'S DATA SHEET ON OIL SAMPLE

DISTRIBUTOR _____

Date on sample sent to WOLF'S HEAD OIL REFINING COMPANY on _____ (date)

Truck or car owner's name _____

Truck or car owner's address _____

Grade of WOLF'S HEAD used: SAE # _____ Heavy Duty SAE # _____

Kind of service _____

Date on test run: Started - Date _____ Finished - Date _____

For stationary equipment or "self-propelled in limited area" like steam shovels, etc., specify hours run _____ Mileage _____

Unit: Make _____ Model _____ ASize _____ Owner's Identification _____

Gasoline engine? _____ Diesel engine? _____ Total mileage on unit _____

Mileage since last major overhaul _____ Kind of filter _____

Exact mileage on present filter cartridge _____

Exact mileage on oil sample submitted _____

Quantity of "make-up" oil added since last drain _____

Grade of gasoline or fuel used _____

Air cleaner used: Kind _____ Regularly serviced? _____

Special information or unusual circumstances _____

IF ENGINE IS OPENED UP AFTER TEST RUN ON SAMPLE, ANSWER FOLLOWING QUESTIONS:

Your estimate of extent of ring filling in percentage _____

Condition of the valves: Intake _____ Exhaust _____

Surfaces showing lacquer, if any _____

Character lacquer deposit: Light _____ Medium _____ Heavy _____

Character deposits on under side of pistons _____

Condition of: Oil screen _____ Crankcase _____

IMPORTANT: Be sure to take average crankcase sample when sample in clean container. Signed _____ to date, Owner's _____

Send a full one quart of oil by tag or label as to secure proper attention, secure a supply of _____

*To All
Truck Operators*
(2)

WOLF'S HEAD HEAVY DUTY OIL Custom-made for Trucks and Buses

Wolf's Head Heavy Duty Oil—developed especially for trucks, buses, and other heavy duty equipment subject to severe operating conditions—combines characteristics never before found in one oil. Extensive field tests—and the service records of many satisfied users—prove that Wolf's Head "H D" Oil prolongs engine life and definitely makes possible lower maintenance cost per unit, per mile, per fleet, per year.

LABORATORY CONTROL SERVICE Assures BEST Lubrication Practice

Wolf's Head Laboratory Control Service provides fleet operators with specific recommendations for their own units, based on analysis by Wolf's Head engineers of oil drained from the crankcases of the fleet's units. These recommendations help to establish correct drain periods, conserve the life of the units, reduce lay-ups for service, and frequently reveal unsuspected mechanical trouble.

FIND OUT MORE about Wolf's Head Heavy Duty Oil, and how to obtain Laboratory Control Service for your own fleet, by writing to Wolf's Head Oil Refining Company, Oil City, Pa., or New York, N. Y.

WOLF'S HEAD MOTOR OIL AND LUBES

100% PENNSYLVANIA  P.G.C.O.A. Permit No. 6



ENGINE BEARING REPLACEMENT

(CONTINUED FROM PAGE 108)

crankcase. The crankcase bearing saddle bores are in correct alignment when an aligning bar (which extends the full length of the case) ground .00075 in. under the case bore diameter can be turned by hand with the aid of a 15-in. pipe extension (or wrench) after the caps are tightened down over the bar.

If the saddle bores are out-of-round in excess of .002 in. and the crankcase is excessively bowed as described, precision insert bearings should not be used if maximum bearing mileage is expected. The main bearings should be align-bored in the crankcase so that the discrepancies can be compensated for.

The align-bored finish must be smooth as obtained with a .002-in. feed per revolution, using a tool bit having a 90 deg. nose with the sharp point stoned off.

Connecting Rods

The crankpin bearing bore and the piston pin bushing bore must be parallel with each other within .001 in 6-in., and the twist between these bores must not exceed .001 in 6-in.

Misaligned connecting rods with pistons out-of-square with respect to the rod bore imposes high false loads not only on the connecting rod bearings but on the piston skirts and cylinder walls.

Corrections are usually made by twisting or bending the rod with a notched bar. Heavy rods seldom remain aligned after this operation. The steel is not permanently set and the rod soon returns to its warped condition. It is better to bore the piston pin bushing accurately to size and in true alignment with the connecting rod bore, thus eliminating any bending or twisting of the rod.

For use with precision insert bearings, the connecting rod bore must be round within .002 in.

If out-of-roundness in excess of .002 in. exists, the rod should be reconditioned or replaced, or an undersize bearing installed which is bored to size in the rod so as to obtain a truly round bearing bore.

Most split main and connecting rod bearings are purposely made with the spread (width across the open ends) slightly greater than the diameter of the crankcase or connecting rod bore in which they are assembled.

The amount by which the spread dimension exceeds the case or rod bore diameter will range between .005 and .020 in. depending on the thickness and structural stiffness of the bearing. Thus, the bearing must be snapped or lightly forced into its seat at assembly, and it will remain in place during subsequent assembly operations when the caps are handled upside down.

The Ford V8 floating connecting rod bearings (all models) are exceptions to the general rule that the width across the open ends should be greater than the rod bore diameter.

In the Ford rod bearings, it is preferable that they be truly round and smaller at every point in the circumference than the rod bore, but, nevertheless, a certain amount of excess width is permissible without damage, even though the rods may

(TURN TO PAGE 112, PLEASE)

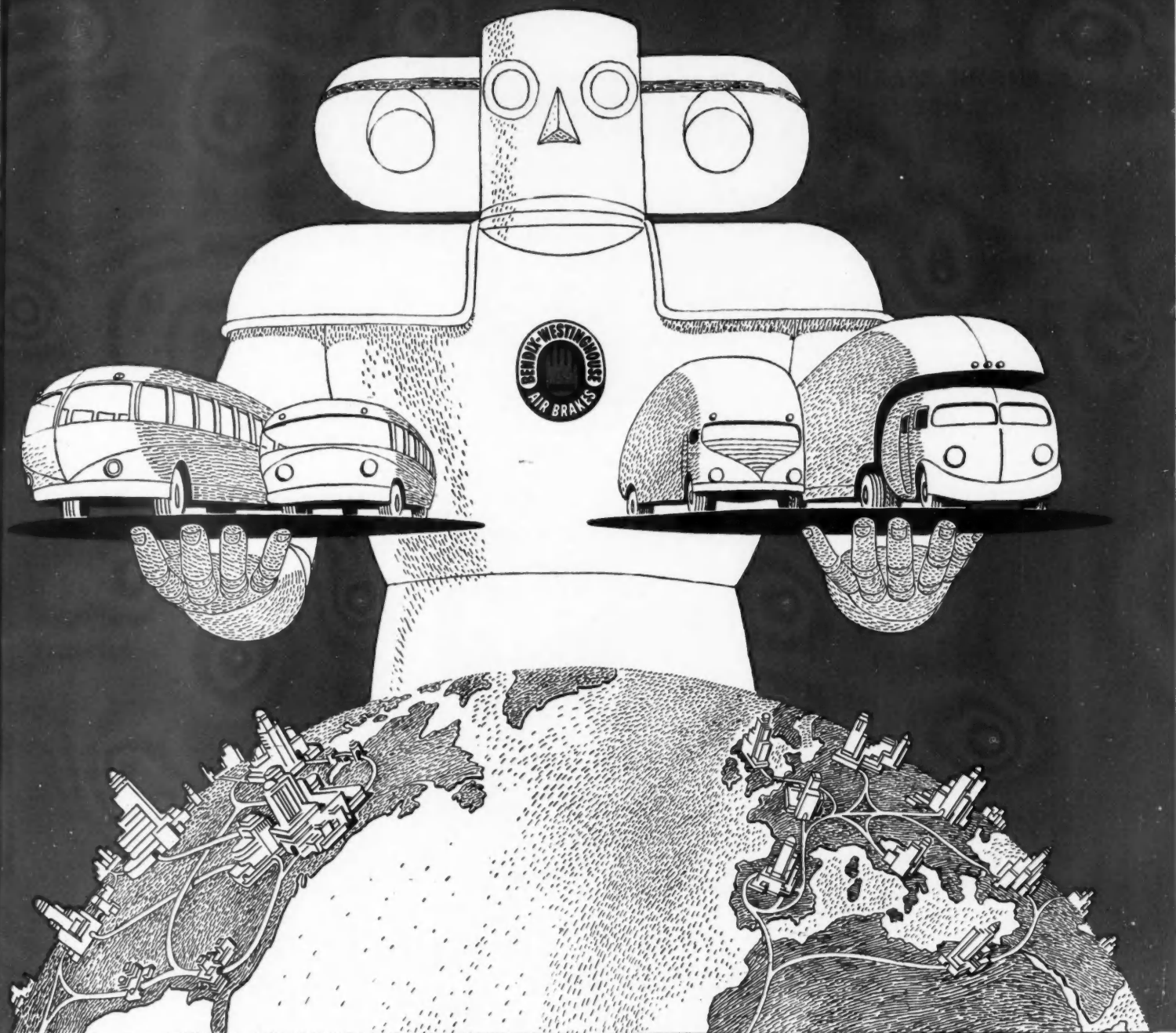


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Unpredictable as the future may seem, peace will come . . . It always has! And in its wake will follow complexities to overshadow our current difficulties ★ It behooves us then to put to work the lessons a belligerent world has forced upon us ★ Certainly now is the time to see that every piece of rolling equipment is brought up to its highest peak of efficiency. And since modernizing Brake Control is one of the quickest, relatively inexpensive and surest ways of accomplishing this end, it seems logical that

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ARE DEVOTED TO YOUR CONVENIENCE AND SAFETY

ENGINE BEARING REPLACEMENT

(CONTINUED FROM PAGE 110)

feel somewhat tight when assembled over the bearing.

The correct distance across the open ends of the various Ford connecting rod bearings, as taken from original equipment specifications, is shown in Fig. 1.

Excessive spread in any bearing is readily corrected as follows: Hold bearing on a smooth block and strike

the side lightly with a soft mallet. Continue until the correct width is obtained.

If, during this operation, the width is decreased to a point less than it should be, it can be increased again by laying the bearing on the wood block and striking the back lightly with the soft mallet.

The spread of any bearing can be safely adjusted by this method.

Camshaft Bearings

Excessive oil leakage can occur at worn camshaft bearings just the same

as at worn mains and rods. Cam bearing wear is considerably slower, but after an engine has used up two sets of main and connecting rod bearings, the cam bearings are a potential source of trouble due to wear.

The increasing use of precision insert main and connecting rod bearings considerably reduces the difficulty of obtaining correct oil clearance if the crankshaft is finished to proper decimal dimensions, and the crankcase and connecting rod bores are round and true to dimensions as originally manufactured.

However, many bearings must be locally align-bored or otherwise sized to fit the crankshaft and the accuracy of the oil clearance must be carefully attended to.

Oil Clearances

Recommended oil clearances for various types of bearings are shown in Fig. 2. To obtain the clearances specified, it is assumed that the crankshaft diameters will be accurately obtained by micrometer measurement and the bearings accurately bored to suit, also by micrometer measurement. However, it is necessary to check the clearance after the various machining operations, and for this purpose the use of brass shim stock of the correct thickness has been very successful.

The length of the shim stock gage should be approximately $\frac{1}{4}$ in. less than the length of the bearing and $\frac{1}{4}$ in. wide. It is desirable that the edges be smoothed down on an oil stone so that no sharp, turned-over corners will remain to embed themselves in the soft bearing.

Place cylinder block in an inverted position. Start at center bearing or one of the intermediates, in a four bearing engine. Coat feeler lightly with engine oil on both sides.

Place feeler of correct thickness on crankshaft journal; assemble and tighten cap and lower half of bearing. With the assembled crankshaft grasped with both hands, rotate the shaft by hand through an arc of 2 in., 1 in. each way. With the feeler in place, the shaft should be movable with a fairly heavy drag.

Remove feeler, replace cap, but do not tighten; this check must be made with the cap and bearing over the feeler only, tightened down. The remaining caps should be loosely in place.

(TURN TO PAGE 115, PLEASE)



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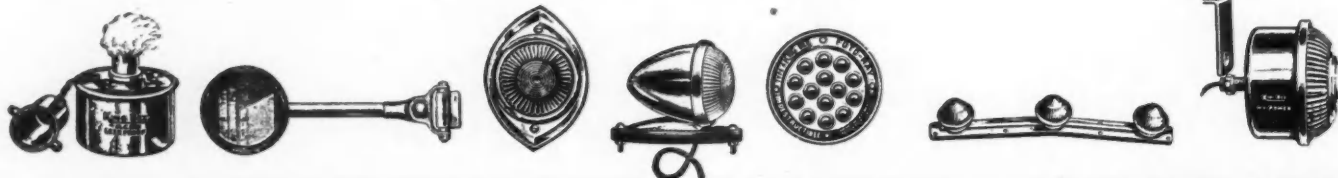
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ENGINE BEARING REPLACEMENT

(CONTINUED FROM PAGE 112)

Repeat the operation next at the rear bearing, then at the intermediates. Make sure that ends of bearings do not ride the crankshaft journal fillets.

Provide Correct Clearance

It is important that proper crankshaft end clearance (end play) be provided at the thrust bearing. End clearances are recommended as shown in the following table:

TABLE I

Recommended Crankshaft End Clearance at Thrust Bearing and Connecting Rod End Clearance	
Diameter Crankshaft Journal	Recommended End Clearance
2 to 2 3/4 in.	.004/.006 in.
2 13/16 to 3 1/2 in.	.006/.008 in.
Over 3 1/2 in.	.008/.010 in.

With the thrust collar on the crankshaft in contact with the thrust surface of the bearing at one end, the total clearance is readily measured with a feeler at the other end.

Torque Indicating Wrench

The excessive tightening of studs, nuts and cap screws in an engine will harmfully distort cylinder heads, cylinder blocks, connecting rod bores, crankcase main bearing bores and many other parts.

When the crankcase bearing saddle bores and the connecting rod bores are originally machined, the cap bolts or nuts have been tightened to a specified reading on a torque indicating wrench. The bores are exactly round under the specified condition of bolt tightness, but if the bolts are drawn down tighter or if they are not as tight as the original setting, the crankcase and rod bores will not be truly round, and bearing life will suffer.

Assembling Main Bearings

In certain engines employing precision insert bearings, it is possible in an emergency to remove and replace an upper main bearing shell without removing the crankshaft. The bearing may be light wall steel back with the locking lip on one side or heavy wall steel or bronze back, in which no dowel is used in the upper shell.

To remove a bearing of this character from the engine, remove the cap at the bearing involved and back off all the other caps slightly so that the shaft is entirely free from the upper bearings. A special headed plug in steel or bronze, of the general design shown in Fig. 3, is then inserted in the crankshaft oil-way and the shaft rotated until the extended end of the plug is in contact with the bearing on the side opposite the locking lip. Turning the crankshaft carefully in a direction towards

the locking lip will rotate the bearing from its position in the crankcase.

To install a new upper bearing, the crankshaft must be turned in the opposite direction to that used when the old bearing was removed. Place the new bearing on the crankshaft journal with the plain edge ready to enter the space between shaft and crankcase bore on the side of the crankcase bore which is milled to receive the bearing locking lip. Make a careful visual alignment of the

(TURN TO PAGE 118, PLEASE)



When the FLEET'S IN

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Between hauls — replace faulty ignition parts with Niehoff Approved Quality Products and keep your trucks geared to the strain of War Time loads and running schedules.

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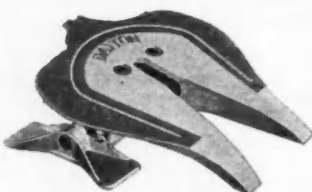
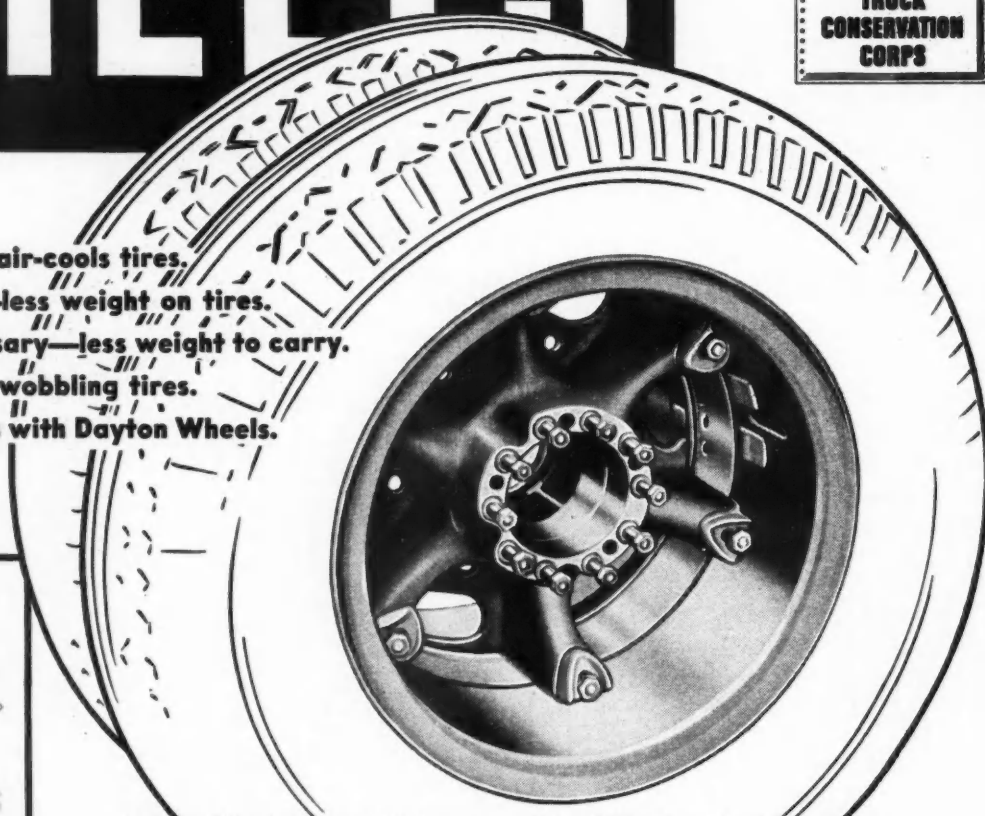
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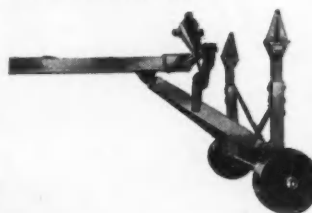


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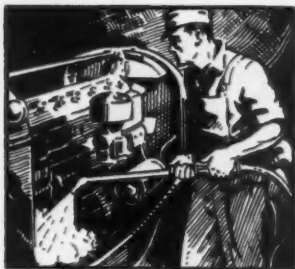
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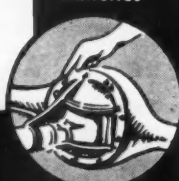
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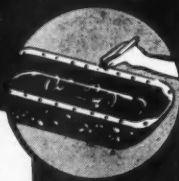
Engine Gaskets



Gasoline Lines



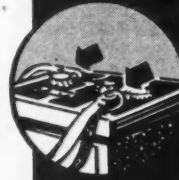
Differentials



Crankcase



Transmission



Batteries

ENGINE BEARING REPLACEMENT

(CONTINUED FROM PAGE 115)

bearing locking lip and its slot in the crankcase when the bearing is placed on the shaft so that as the bearing is rotated into position, the lip will nest properly in its slot without binding.

If the bearing to be removed is a heavy wall type without a dowel, turn the crankshaft in a clockwise direction (looking from front of engine). To install the new bearing, turn the crankshaft counter-clockwise.

As explained previously, all bearings are made with a certain amount of spread across the open ends. In heavy wall bearings this spread may cause some difficulty when it is attempted to make a bearing installation, as described, without removing the crankshaft. In this event, round up the bearing by holding it on a smooth block and striking the side lightly with a soft mallet. Continue until the correct width is obtained.

This type of bearing replacement is an emergency measure only. The work is done blind and there are many chances for error. Be sure that the crankshaft journal, crankcase bore and bearing back are wiped clean.

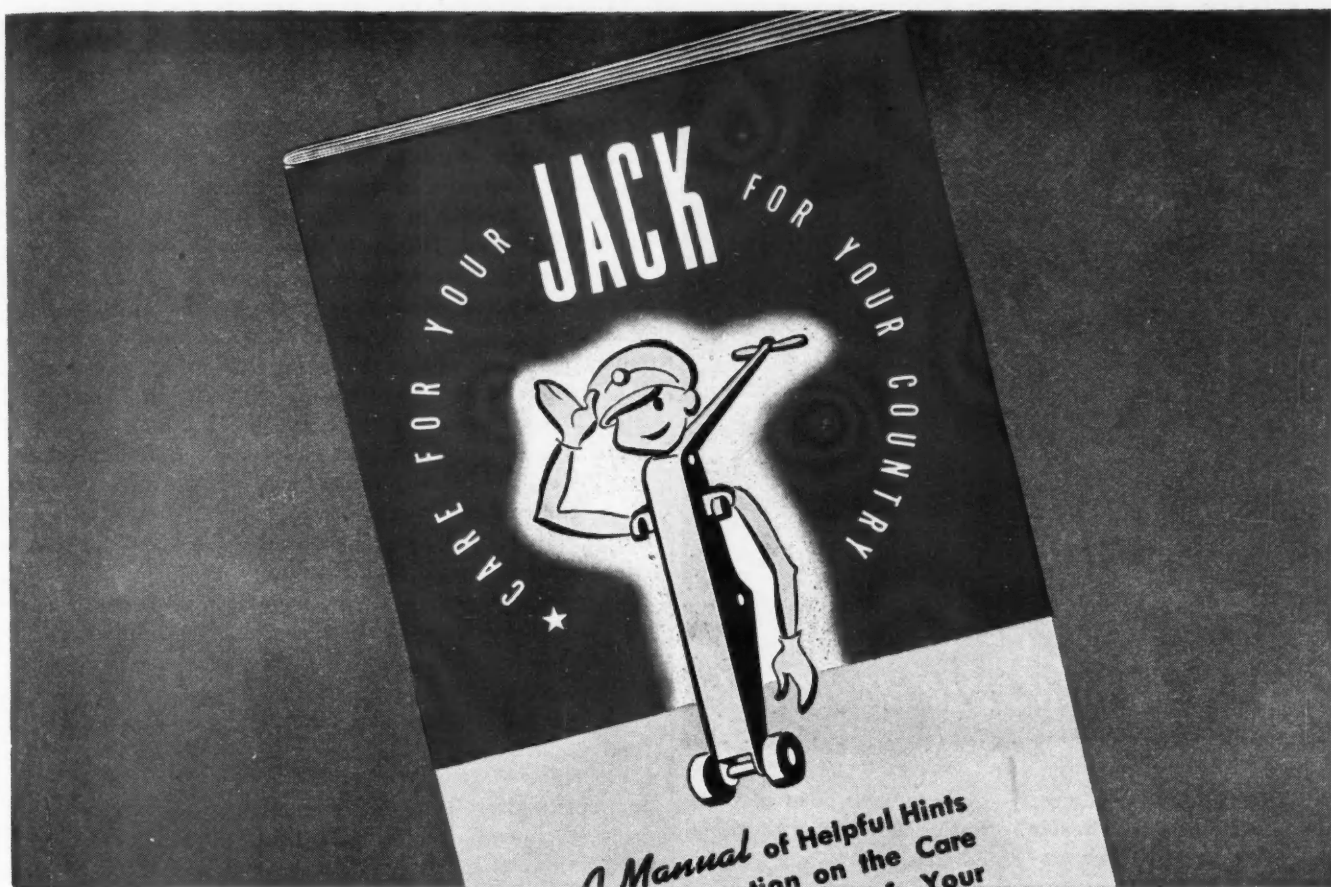
Correct Oil Pressure

The amount of engine oil pressure is shown by the oil gage and must be maintained at the point recommended and built in by the engine manufacturer. Oil pressure which is higher than the engine builder's recommendation is seldom harmful (and also seldom encountered), but low oil pressure is likely to result in inadequate lubrication and early failure of new connecting rod bearings, especially during high speed operation.

Assuming that all bearings have the correct amount of oil clearance, low oil pressure is usually caused by wear in the oil pump gears or oil pump housing, a faulty oil pump cover gasket and a weakened oil pressure relief valve spring. Leakage at breaks or cracks in main oil headers or other internal oil lines are also responsible for reduced oil pressure but trouble at these points is easily located by the use of a bearing oil loss indicator.

END

(Please resume your reading on P. 39)

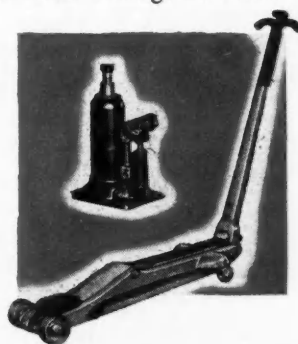


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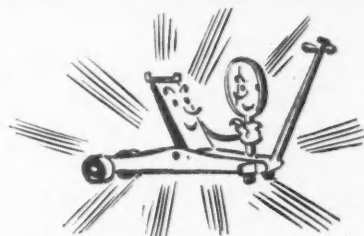
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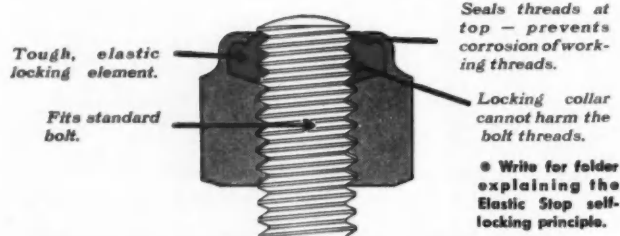
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ODT Manpower Survey to Cover 25 Critical Cities

Special labor-management committees will be appointed in 25 "critical" cities to survey labor shortages and potential labor reservoirs in the motor transport industry, Otto S. Beyer, Director of the Transport Personnel Division, Office of Defense Transportation, announced Dec. 17.

The surveys were recommended the day previous, at the second of a series of monthly meetings between the Labor-Management Committee of the for-hire motor transport industry and officials of the ODT.

Cities named by the committee as "critical," because of truck driver shortages are: Akron, Baltimore, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Columbus, Denver, Detroit, Hartford, Kansas City, Los Angeles, Louisville, Minneapolis, New York, Oakland, Philadelphia, Pittsburgh, Portland (Ore.), St. Louis, Salt Lake City, San Diego, San Francisco, and Seattle.

Three representatives of the trucking companies in each city and three from the city locals of the International Brotherhood of Teamsters will be named by their principals to each of the special committees. Committee members may call upon local War Manpower Commission representatives for any aid needed, Mr. Beyer said.

Objective of the survey will be to devise ways and means completely to utilize truck driver manpower sources within each city so as to avoid among other things, bringing new people into these critical localities where housing and other facilities already are overburdened.

As an example, the committee pointed to cities which allowed municipal employee who work 40 hours a week, or less, to drive essential local and over-the-road trucks on their off hours or off days.

All local committees will be requested to finish their surveys and send in reports in time for consideration by ODT officials and the national Labor-Management Committee at the next monthly meeting, to be held in Washington, Tuesday, Jan. 19, 1943.

It is hoped that the work of these local committees will reduce the necessity for recruiting an estimated 65,000 new workers who will be needed in the motor transport industry by June of 1943 unless methods can be found to utilize present employees more effectively, Mr. Beyer said.

At the meeting the committee also considered the joint Labor-Management truck conservation program which was recommended at the previous meeting. The program was discussed briefly on Thursday evening, Dec. 17, from 10:30 to 10:45 p.m., EWT, over the Columbia Broadcasting System. Joseph B. Eastman, ODT Director; Dave Beck, vice-president of the Teamsters' Brotherhood; Ted V. Rodgers, president of the American Trucking Association, and Mr. Beyer participated.

Members of the Labor-Management Committee present were:

Representing labor: Dave Beck, Fred. A. Tobin, Frank Brewster, Frank Gillespie, John Rohrick, James Hoffa, and Robert Borden. Representing management: Jack Altwater, Carl Ozee, Leland James, Ted V. Rodgers, C. G. Morgan, Jr., John V. Lawrence, Charles P. Clark and Ray Mason. In addition to Mr. Beyer, the ODT was represented by John L. Rogers, Director of the Division of Motor Transport, and E. M. Fitch and Phil Trezise, of the Division of Transport Personnel.



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LOW OCTANE VS. CON-ROD BEARINGS

(CONTINUED FROM PAGE 46)

stances that the engine has been timed too late to provide maximum power and efficiency. Also an overheating condition may develop.

Therefore it is considered necessary that the compression ratio of the engine be reduced to the compression ratio of the engine when 70-octane gasoline was in general use.

New cylinder heads designed to reduce the compression ratio may make their appearance shortly for certain high compression engines. However, the simplest and most inexpensive method now available is the installation of two cylinder head gaskets, preferably of the metal-covered type.

After the installation of two cylinder head gaskets, the ignition timing should be set on the road with the same conditions present under which the equipment is operating. The timing should be set so that a slight detonation, or pinging, develops. Then it should be retarded so that all detonation is eliminated. The adjustment should generally be such that only a very slight ping is evident around 10 and not over 15 miles per hour. No ping should be heard at higher speeds when accelerating with wide-open throttle.

When replacement bearings of the soft-metal type are being installed in an engine, a thorough check should be made to be sure that:

1. Crankshaft is clean and not out of round.
2. Rods are not out of round and not tapered.
3. Crankcase is free of dirt.
4. Rods are properly bolted; that is, not too much or too little tension on either side.

5. Cap and rod are lined up properly.

6. Bearings themselves must be free of all dirt particles both on inside and outside diameters.

7. Reground crankshafts should be checked to see that the bearing throws are not tapered.

8. Reconditioned connecting rods should be checked to see that they are not tapered or out of round.

Careful tests indicate that better bearing life with the new soft-metal bearings results when plenty of oil is available for the bearings at idling speed. This is very important. The oil relief spring and check valve assembly should be removed and cleaned. A new spring can be installed if necessary.

Tests also show that better results will be obtained if the heaviest weight oil recommended by the engine manufacturer is used. This insures the best cushion effect for the bearings. Oil change periods must be shortened in order to maintain clean engines and clean engine parts. The oil should be changed every 1000 miles and more often under extremely dusty operating conditions. Oil filters and air cleaners should be serviced more frequently.

Under no conditions should equipment in which the new soft-metal bearings have been installed be driven over the Federal regulation of 35 miles per hour, regardless of whether the truck is equipped with conventional or two-speed rear axle.

Everything in the preceding paragraphs and the corrective measures suggested are based upon actual experience. In one fleet, bearing life was between 1200 and 1400 miles. Twenty engines in this fleet were serviced along the lines suggested above and no bearing failure has occurred to date. The first engine rebuilt has been in service over 7000

miles with no sign of bearing failure. It is reported that the engines are more flexible, have more power, and operate more efficiently under existing conditions than was the case before these adjustments were made.

Another operator reported that his fleet was averaging less than 5000 miles with the new soft-metal connecting rod bearings, in a 100-hp. high-compression engine engaged in heavy-duty operations. Some bearing sets failed at less than 2000 miles. Formerly the old hard-type bearings in the same equipment averaged approximately 25,000 miles. The compression ratio of this engine was changed by using a low-compression head in conjunction with two cylinder-head gaskets. This change was made in order to reduce the load, particularly the shock load, on the connecting rod bearings. This operator reports that the engine is now more flexible and apparently has more power at 2800 r.p.m. than it did with the high compression head and the governor set at 2200 r.p.m. It had been necessary to reduce the engine speed from 3000 r.p.m. to 2200 r.p.m. in order to get any connecting rod bearing life with the soft-metal bearings.

END

(Please resume your reading on P. 47)

Rural Traffic Drops 35-40%

Traffic on rural roads during December, the first month of nation-wide mileage rationing, will be 35 to 40 per cent less than a year ago, Public Roads Administration of Federal Works Agency estimated on the basis of monthly automatic-traffic-recorder data obtained from state highway departments.

These records show that in the area which has already been rationed for several months, traffic decreases on rural roads, compared with the corresponding months a year earlier, were 40 per cent in October, 43 in September, 49 in August, 41 in July, and 38 in June.

Pennsylvania Rubber Makes Changes

Pennsylvania Rubber Co., Jeannette, Pa., announces the removal of its Boston, Mass., office to new and enlarged quarters at 142 St. Mary's St.

Richard Stempf has been assigned to cover Minnesota, North and South Dakota. Jim Powers will cover the state of Iowa. Both are attached to the Chicago office.

One of a fleet of 250 tractor units employed by the Olson Transportation Co., Green Bay, Wis., in the hauling of war necessities and the essentials of the home front. The units are painted to do an effective job of selling War Bonds and are rolling billboards for Uncle Sam.





Clean as a Smooth Shave

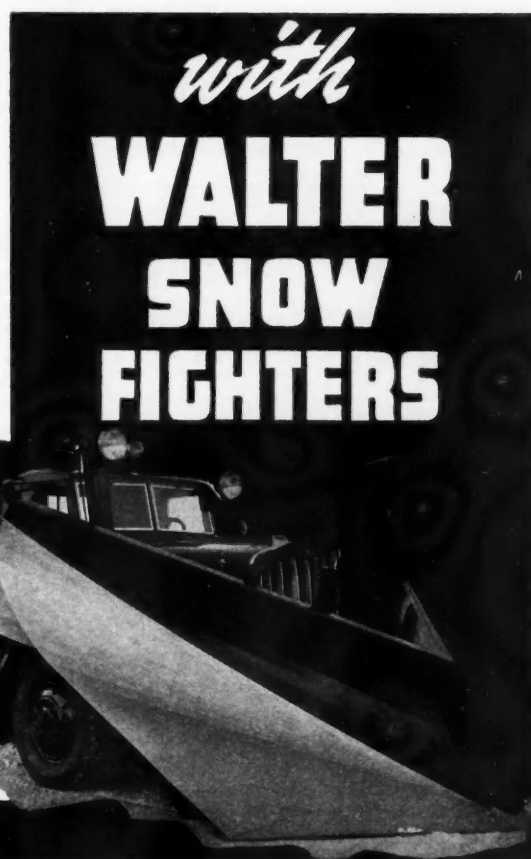


WHEN YOU PEEL PACKED SNOW

SCRAPING hard-packed snow and ice from a busy roadway is a job that calls for specially designed trucks equipped with pressure center scrapers. A front-mounted plow cannot exert the pressure needed for this work. Outstanding results are obtained with Walter Snow Fighters, mounted with Walter Pressure Center Scrapers.

Only with the unique Walter Four-Point Positive Drive is it possible to obtain the steady flow of power necessary to insure a smooth, uninterrupted scraping action. The scraper is so designed as to surmount road obstacles without damage to scraper, truck or road . . . and the entire unit is so flexible that it can wind in and out of traffic quickly and easily. When there is a heavy snowfall, it is only necessary to add the V Plow and side wings as shown in the photograph at the right. Write for details.

WALTER MOTOR TRUCK CO.
1001-19 Irving Ave., Ridgewood, Queens, L. I., N. Y.

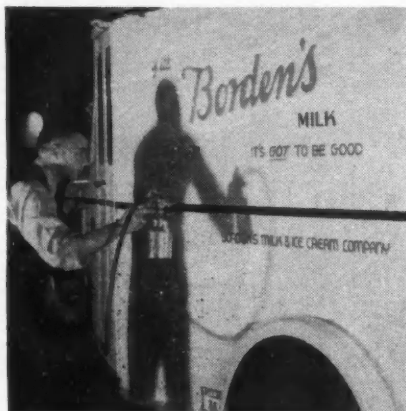


NEW PRODUCTS

(CONTINUED FROM PAGE 43)

is known as Transportation Maintenance Wax and is applied with a spray gun.

A thin spray is applied and allowed to dry to a bright finish. No rubbing is required. It is stated that application time



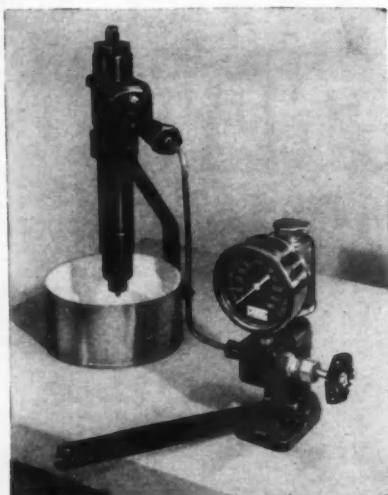
required is between 20 and 45 minutes per vehicle, depending on its size. The vehicle illustrated above required less than 39 minutes for a complete application.

This product has been undergoing tests for several years. Data on results indicate that the use of Transportation Maintenance Wax not only maintained a brilliant finish on the vehicles to which it was applied, but the number of repaint jobs were reduced and cleaning costs were substantially reduced.

Use free postcard for more details

P73. Diesel Nozzle Tester

Fleet owners operating diesel equipment will be interested in the development of a compact, portable nozzle tester for use on any type of fuel injection equipment,



according to an announcement by the Aircraft and Diesel Equipment Corporation, Chicago, designers and manufacturers.

The many uses of this low-cost equipment, it is stated, include the checking of injector opening pressure, spray pattern, stuck needle valves and injectors on the

engine. Among the advantages listed are the speed and accuracy of the tests, the flexibility of use, simplicity of operation, and the elimination of possible injury to injector tips.

A special bulletin presents full details including sectional and analytical drawings of this Adeco hand test pump, together with illustrations of various adaptor tubes for testing all makes of injection equipment.

Use free postcard for more details

P74. Anti-Icer Fluid

The hazards of driving in winter when ice or sleet forms on windshields are greatly reduced by the use of "Saf-Vue," an anti-icer fluid, according to the claims of the H. & G. Research Laboratories, Inc., Denver, Colo. The manufacturer claims that the fluid expels and prevents icy windshield formation. It will not injure paint or metal, and is non-inflammable. It can be applied by a hand sprayer, sponge or rag. Also offered is a defrosting unit composed of a pressure tank holding one quart of "Saf-Vue," which can be attached to the steering column of any truck or car. With the necessary tubing and nozzles, this unit makes it possible to apply the fluid as needed while driving.

Use free post card for more details

P75. Victory Tire Patches

With the conservation of rubber uppermost in the minds of every operator, their problem in so far as the patching of tires is concerned will be made easier by the use of the new "Victory" tire patches just announced by The Mansfield Tire & Rubber Co., Mansfield, Ohio. These new patches are merchandised in the three most popular sizes.

Use free postcard for more details

P76. Rust Preventive

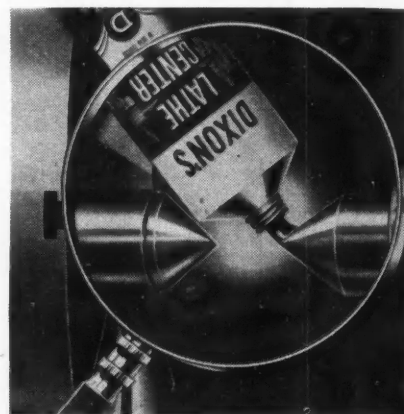
A new rust preventive, known as "Commando" is now offered by the R. M. Hollingshead Corp., Camden, N. J. It is claimed that it works on an entirely new principle, preventing rust by chemically imprisoning all the oxidizing elements in the water. One application rust-proofs the entire cooling system for the season. The manufacturer further claims that it will not harm gaskets or rubber hose connections and works equally as well when mixed with any standard anti-freeze.

Use free postcard for more details

P77. Lathe Center Lubricant

The problem of many fleet operators in keeping their machine parts and tools in best usable condition, for the longest possible period of time, will be made easier so far as their lathe equipment is concerned, by the use of a new lubricant for the dead centers of lathes.

This new lubricant has been developed by Joseph Dixon Crucible Co., Jersey City, N. J. It is a combination of pure flake lubricating graphite and other specially formulated ingredients. The manufacturer claims that it will withstand the extremely high pressure and temperatures developed at the dead center in lathe work, and will effectively control overheating and protect



dead centers against scoring and softening, thereby reducing wear of the center and also reducing spoilage of work. It is further claimed that this product also has many uses as an anti-seize compound where a lubricant of extreme film strength is required.

Use free post card for more details

P78. Fire Extinguisher

A new fire extinguisher, designed in accordance with emergency war specifications, is available without high priorities.



It is approved by the Underwriters' Laboratories and fulfills the requirements of Rule 3.3491(a) of Motor Carrier Safety Regulations, Revised. This extinguisher is manufactured by the duGas Engineering Corp., Marinette, Wis. The unit consists of two red fibre tubes held by straps in a red, wood bracket. Each tube contains 7 lb. of duGas dry extinguishing compound. The tubes are sealed and bear labels giving directions for use. The bracket is intended for mounting in the cab by means of screws. A fibre-board cover box is furnished with each unit for additional protection of the tubes if a floorboard mounting is necessary.

Use free postcard for more details

END

(Please resume your reading on P. 44)



...Whichever Shall Come First

5000 miles service—or 60 days (whichever occurs first) is the period set by ODT order No. 21 for official truck tire inspection.

Thus, tire conservation becomes mandatory and a great responsibility rests upon you, the operator, and upon the inspector to assure the continued transportation of vital materials by truck.

Most Diamond distributors have been appointed as Official

Inspection Stations. They are pledged to assist the government in helping to prolong tire life—and they will willingly perform their new inspection duty honestly and sincerely.

Most important to you is the fact that your Diamond distributor has the mechanical equipment necessary for thorough inspection, and he has the experience to perform this service intelligently.



Diamond

"HEAVY SERVICE" TRUCK TIRES

THE DIAMOND RUBBER COMPANY

A Division of The B. F. Goodrich Company

Akron, Ohio • Los Angeles, Cal.

SAVING ENGINES WITH SLEEVES

(CONTINUED FROM PAGE 39)

distortion of the sleeve, with subsequent corrective honing, is to be avoided. The machining can be done with either a precision cylinder grinder or a boring bar. More than one grind or cut should be made to obtain the finished size.

The specification for the fit of the sleeve to the bore depends on which type of sleeve is being installed—the cast iron sleeve of comparatively low Brinell rating (200 minimum) or the steel sleeve with high Brinell rating (460 minimum). The usual fit for the cast iron type of sleeve is a shrink or press fit of .002 in. to .003 in., whereas a line to line fit is considered satisfactory in the case of the high Brinell type steel sleeve (except in rare instances where extremely thin sleeves are used, in which cases a slightly tighter fit is necessary). Where a plain sleeve of this type is to be used, it is recommended that a shoulder be left in the bottom of the bore, in order to lock the sleeve in place between its shoulder and the cylinder head gasket. Where it is possible to install a sleeve with a shoulder at the top to register with a groove at the top of the bore, a shoulder in the bottom of the bore is not necessary.

INSTALLATION METHODS

The practicability of three methods of installing dry-type cylinder sleeves in cast en bloc engines has been well demonstrated:

1. Use of Puller Assembly

The first of these methods, the puller method, requires that, prior to insertion in the bore, the O.D. of the cylinder sleeve be given an even coat of thin white lead or hydraulic

brake fluid. This precaution prevents scoring of the sleeve as it is pulled in.

Care should be exercised to start the sleeve in squarely, in order to prevent "cocking" or distortion. It should be drawn down with an even pull until it is flush with the top of the cylinder block, as shown in Fig. 1.

When a number of sleeves are to be installed, say 6, they should be installed in alternate bores as, for example, 1, 3, and 5 followed by 2, 4, and 6. This procedure, permitting the block and sleeves to normalize themselves gradually, is a safeguard against distortion, with implied complications.

Upon completion of the installation of sleeves in a block the I.D. of each sleeve should be measured with inside micrometer and dial indicator for possible distortion resulting in a taper or out-of-round condition which would impede piston travel. If either condition is indicated it should be corrected by reboring or honing.

In order to remove all abrasive particles, the installed cylinder sleeves should be washed out with soapy water, flushed with clear water, and dried with air. When dry, the cylinder sleeves should be lubricated without delay to prevent rusting.

Running clearance between piston and cylinder wall should be checked with steel ribbons or feeler blades of specified thickness and tension pull.

2. Use of Air Hammer

The second installation method, the air hammer method, is the same in principle as the puller method just described, in that the cylinder sleeve in each case is forced into the block bore under strong pressure. The air hammer method, however, does differ in the following detail:

To use the air hammer it is necessary to make up a "driving" plate

that will fit the I.D. and O.D. of the cylinder sleeve and take the blows of the hammer. The plate must be strong enough to withstand blows of half the operating pressure of a small air hammer and must be secured in some way, so that it will remain in constant contact with the sleeve (to prevent damaging the end of the sleeve). See Fig. 2.

In all other respects the installation technique given in the previous section for the puller method applies throughout for the air hammer method and need not be repeated here.

3. Expansion and Shrinkage Method

This third sleeve installation method for cast en bloc engines differs from the preceding two in that it does not demand the exercise of force. Under this method the engine block is filled with hot water to bring about expansion or enlargement of the bores, while the cylinder sleeves are chilled by dry ice or other refrigerant to bring about shrinkage and a reduced O.D. Ordinarily, under this method the sleeve can be installed by hand but may sometimes have to be tapped in (with a soft wood block).

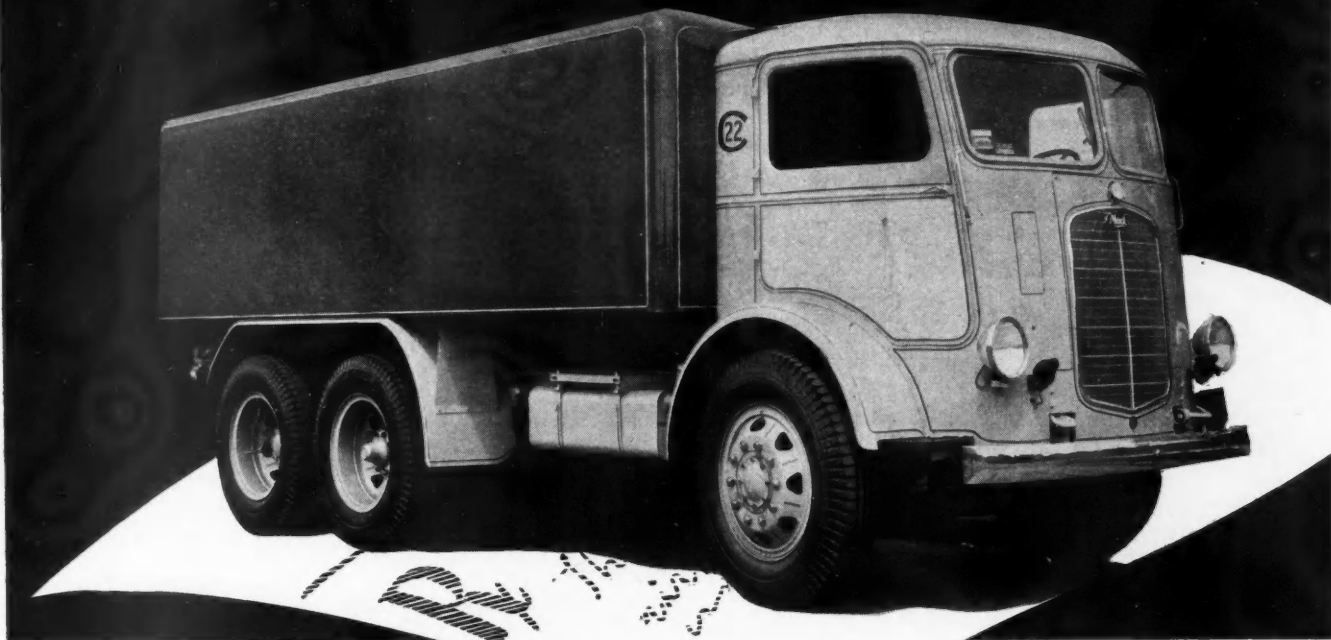
Under this method sufficient time must be allowed for the block and sleeves to normalize themselves as to temperature before the bores are checked for taper and out-of-round, running clearance, etc., as described in connection with the puller assembly method.

(TURN TO PAGE 128, PLEASE)

The Alton Box Board Co., of Alton, Ill., is participating in the drive to promote the sale of war bonds by painting its six semi-trailers red, white and blue. Both sides are a solid white background with a red, white and blue border. Lettering and designs are also in red, white and blue. The soldier and sailor figure colors are blended to color of real life. The nose and back of each unit is painted solid red, with the slogan "Keep 'Em Rolling" in red, white and blue colors across the rear doors. It cost the company \$198 to paint the six units. All work was done in its own shops



Fleetowners! HERE'S THE REMEDY FOR YOUR HEAVY TRUCK SHORTAGE-



Double Payload Capacity with Truكتور 6-WHEELERS

THE greatest loads in trucking history to haul . . . and a rigidly limited number of trucks with which to haul them! We don't pretend to have the entire answer to your troubles, but Truكتور 6-Wheeler Conversion is a remedy that will help a lot.

Why? Simply because this conversion usually doubles the payload of the trucks while conserving vital raw materials and manpower for our War production program. As compared with two four-wheelers, the Truكتور Six-Wheeler saves the structural materials needed for one complete truck; two rubber tires and tubes; the gas and oil which would be used by

the extra truck; and the manpower needed to build, operate and service it. These savings will favorably impress your Rationing Board when you apply for a Truكتور Third Axle Unit.

Furthermore, the Truكتور Six-wheeler is easier on the highway (proved by government impact tests), therefore easier on your tires. It is safer, (verified by I.C.C. accident reports and insurance statistics). It is more maneuverable, (witness its wide use by the Army).

Take the first step toward doubling the payload capacity of your four-wheeler fleet NOW! Write us for detailed information.

.. and SAVE:

- 1. Vital Structural Materials**
- 2. Rubber**
- 3. Gas and Oil**
- 4. Manpower**

THE TRUكتور CORPORATION • 156 WILSON AVENUE, NEWARK, N. J.

Truكتور **THIRD AXLES**

SAVING ENGINES WITH SLEEVES

(CONTINUED FROM PAGE 126)

(b) Reconditioning and Replacing Dry-Type Cylinder Sleeves in Replaceable Cylinder Sleeve Engines

It is accepted practice, when required, to oversize dry-type sleeves for larger pistons up to the limit of manufacturers' recommendations, which run from .040 in. to .060 in. Sleeves which cannot be oversized within specified limits definitely should be replaced.

The method of oversizing dry-type sleeves depends on the material in them. If the sleeve material has a low Brinell rating a boring bar, grinder, or hone can be used very satisfactorily. If the sleeve has a high Brinell rating, a boring bar cannot be used and the sleeve must be oversized by grinding or by use of a hone with stones of special grit. Naturally, the oversizing of a high-Brinell type sleeve involves considerable work, for which reason only the minimum amount of metal should be removed.

No measurements for distortion, running clearance, etc., should be taken before the bore has had time to cool and normalize itself.

Whenever sleeve oversizing requirements exceed the manufacturers' recommendations in that respect, the sleeve should be replaced.

Pullers are available, or can be made up locally, which are very satisfactory for the removal of used sleeves. See Figs. 3 and 4.

It is recommended that, following removal of the sleeves, a hone with fine-cutting stones be passed through the bores of the block to polish the surfaces. The polishing not only facilitates installation of the new sleeves, but assures maximum contact of sleeve to bore for most efficient transfer of heat.

Before installation the O.D. of each sleeve should be measured, to make sure it is the right size for the bore in which it is to be installed. Installation of sleeves will be further facilitated and scoring prevented if the outside surface is given an even coat of thin white lead or hydraulic brake fluid.

As the three commonly approved methods of installation have been described in detail in Section (a), the

reader is referred to that section for particulars.

(c) Reconditioning and Replacing Wet-Type Cylinder Sleeves in Wet-Type Replaceable Cylinder Sleeve Engines

For various reasons manufacturers of wet-type replaceable cylinder sleeve engines have, in the past, been reluctant to approve the oversizing of wet cylinder sleeve bores and installation of oversize pistons as a remedy for cylinder sleeve wear or damage. The three main objections cited by the manufacturers are, first, the general unavailability of the skilled mechanics and precision re-boring equipment necessary for a good job; second, the frequent dissatisfaction of owners with the jobs turned out, as compared with a straight replacement job; and, third, the much longer time the truck is "down", as compared with straight-replacement "down" time.

Today, however, owing to the necessity of conserving metal required for the country's war effort, the practice of oversizing wet-type sleeves is favorably regarded, so long as all necessary precautions are taken in reconditioning the sleeve. The oversizing must, of course, be held within the specified safe limits of .040 in. to .060 in., except in the case of extremely heavy sleeves, when larger tolerances are permissible.

Regarding oversizing procedure, we make the following recommendations:

As experience has proved the impracticability of grinding, honing, or boring out wet-type cylinder sleeves in their original block, or case, it is definitely recommended that sleeves be removed from the block and placed in a special fixture affording at least a line to line fit. A line to line fit will prevent movement of the sleeve during the operation.

It is the absence of a line to line fit between a wet-type sleeve and the block which makes it impracticable to oversize these sleeves in their original blocks. Clamping the sleeve at the top to prevent movement during oversizing strongly tends to distort the upper section of the sleeve, while failing to prevent movement at the lower end, owing to the resilience of the rubber seal ring or gasket. Consequently, it is almost impossible to make a straight or round bore in this manner.

Removal of sleeves is accomplished by means of a puller, hydraulic jack or press. Usually, wet-type sleeves need to be forced out only about one inch, or until the sleeve breaks loose and clears the seal ring. A sleeve can then be lifted out by hand, as shown in Fig. 5.

The rubber seal ring should be removed immediately, before it hardens. The ring groove should be thoroughly cleaned, as should the retaining flange and lower end of sleeve-support surfaces and the entire O.D. of the sleeve.

To facilitate installation, the new seal ring should be coated with white lead or a mixture of heavy soap suds and glycerin. The sleeve should then be pushed gently into place, care being taken to prevent damaging the rubber ring. In the majority of cases no pushing tool is necessary.

It is finally recommended that the manufacturers' instructions covering sleeve replacement be followed in all cases.

END

(Please resume your reading on P. 40)

WPB Automotive Advisory Committee

The War Production Board has announced that the members of the Automotive Industry Transportation Advisory Committee are as follows: L. C. Allman, Fruehauf Trailer Co.; H. C. Boyer, White Motor Co.; J. J. Crimmins, Studebaker Corp.; Albert Crockett, Mack-International Truck Corp.; M. L. Gibson, International Harvester Co.; N. D. Hoke, Chrysler Corp.; O. A. Johnson, Ford Motor Co.; Geo. H. Ostermann, Timken-Detroit Axle Co.; W. Carl Parker, Diamond T. Motor Co.; C. R. Scharff, General Motors Corp., and J. P. Sexten, Electric Auto-Lite Co.



W. T. Hunter, above at left, vice president, A. Schrader's Son, Brooklyn, N. Y., is shown accepting the joint Army-Navy "E" Award for the 3,000 Schrader employees. Major H. R. Battley is making the presentation which was held in the Grand Ballroom, Hotel St. George, Brooklyn, and which was broadcast over the Blue Network

"for need of a jack -- delivery of war materials was held up"



Do YOUR Part To Keep Trucks Rolling



Avoid unnecessary delay when tire changes are necessary . . . Equip your trucks with

HEIN-WERNER HYDRAULIC JACKS



Model 20.10A

It is bad enough for a truck driver to get a flat tire while on a run, but it's worse to get a flat while on a narrow road—and *not have a jack*. Traffic may be blocked, as illustrated above, and delivery of war materials held up.

You can help speed-up deliveries by making sure that the tool kit of each of your trucks contains a Hein-Werner Hydraulic Jack.

The speed and ease of operating one of these jacks cuts down the "lost time" required to lift the flat tire clear of the road, change the tire, and get the job rolling again.

Don't delay! Act today! Complete line includes hydraulic jacks of 3, 5, 8, 12, 20 and 30 tons capacity . . . *Quick delivery* can be made on orders carrying priority rating.

Ask your H-W Jobber for details—or write us

HEIN-WERNER MOTOR PARTS CORP.
Waukeesa, Wisconsin

**HEIN-WERNER
HYDRAULIC JACKS**
Are Built Right and Priced Right

WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 29)

the effect of the Temporary Transportation accorded operators for December and January? Since it came in a busy season and they got all the gas they wanted, did it result in a 60-day suspension of voluntary conservation measures? How will the new grace period extending to April 1, left to the discretion of ODT examiners, affect these measures?

Should a Neck be Wrung?

All in all, the future of "Turney's Turkey" is not bright. Some one must decide, and decide soon, if it would not be in the public interest to wring the turkey's neck and go back to voluntary cooperation. The decision ought not to be forced by the new Congress if ODT is to retain the remnants of operators' respect.

Used Truck Price Ceiling

Ever since early September the truck industry has been on tenterhooks regarding a price ceiling on used commercial vehicles. The opinion at press-time was that a ceiling schedule had been prepared and was in the hands of learned OPA lawyers and economists, otherwise familiarly known in Washington as the "bulge-brows." There was no telling what commas would be deleted or what "and/or's" would be added, and certainly no predicting when the learned gentlemen would reach a decision. One authoritative source took a long chance and said the schedule might be okayed by the end of December and become effective around the middle of January.

Principal Points

Before being submitted to the bulge-brows the price ceiling schedule was subjected to an industry discussion called by OPA and held in

Cleveland. Some of the points considered at this meeting are included in the following unofficial, subject-to-change, gathered-here-and-there summary of definitions and schedules:

1. "Used Commercial Motor Vehicle" means a self-propelled vehicle, or a vehicle drawn by it, which was designed for use on or off the highways for the transportation of property or of more than 10 persons, and has been driven more than 1000 miles. It includes trucks, truck tractors, full-trailers, semi-trailers, ambulances, hearses, omnibuses, carry-all suburbans, sedan deliveries, utility sedans, coupes fitted with pickup boxes, cab pickups, and chassis and bodies for all of the foregoing.

2. "Dealer" means a person engaged, in whole or in part, in the business of buying, selling, repairing and reconditioning used commercial motor vehicles and who maintains a place of business for displays, sale, repairing and reconditioning of such vehicles.

3. "Base Price" is composed of the sum of the F.O.B. factory price, plus the manufacturer's price of any extra or optional equipment, and plus the freight charges at carload rates as of March 31, 1942, from the factory by the most direct route to the freight station nearest to the "dealer's" place of business.

4. "Maximum Price" shall be determined by multiplying the "base price" by the allowable percentage factor corresponding to the "age" of the vehicle as set forth in the Table of Percentages for "As-Is" Vehicles, and in the Table of Percentages for Reconditioned and Guaranteed Vehicles.

5. "Age" as used in the percentage tables is the period commencing with the date of delivery of the chassis when delivered new to the person who purchased it for use. If this date cannot be factually established, the "age" will be the period measured from the first day of December preceding the year by which the model and year of manufacture of

the chassis was designated by its manufacturer.

6. Table of Percentages:

AGE (In months)	Per Cent of BASE PRICE	
	As Is	Repaired and Guaranteed
6 mos. or less.....	90	97
Above 6 to 12.....	81	91
Above 12 to 18.....	73	86
Above 18 to 24.....	66	82
Above 24 to 30.....	59	78
Above 30 to 36.....	53	75
Above 36 to 42.....	48	73
Above 42 to 48.....	43	71
Above 48 to 54.....	39	70
Above 54 to 60.....	35	69
Above 60 to 66.....	32	68
Above 66 to 72.....	29	68
Above 72.....	26	68

7. When a vehicle is sold as "Repaired and Guaranteed" the dealer must furnish the purchaser with an itemized list of the parts and materials used and the amount of labor used, and also with a signed 30-day or 1000-mile guarantee.

Guarantee Allowance

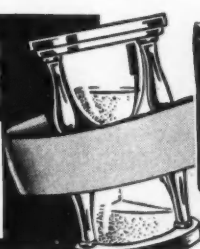
At the industry meeting in Cleveland a question arose regarding dealer compensation for minor repairs made to vehicles sold "As Is." The official view was that if any charge is made above the "As Is Percentage" the vehicle must be guaranteed. This seemed rather harsh on the dealer and it was finally agreed that in such cases the vehicle must be guaranteed but the dealer may add 5 per cent to the "As Is" price before the addition of repair charges. However, the total price in such a case may not exceed the price of the same vehicle arrived at by application of the Repaired & Guaranteed percentage. It was understood that inclusion of the 5 per cent provision to compensate for the guarantee would be included in the schedule recommended for approval by OPA.

Miscellany

ODT will not recommend to WPB the freezing of used commercial (TURN TO PAGE 132, PLEASE)

KATHANODE

To cut operating costs by making batteries last longer and perform better, install Kathanode, the original spun glass, heavy duty battery.



THE LONG LIFE BATTERY

KATHANODE CORPORATION • CHICAGO, ILL.



WIRY JOE SAYS:

KEEP 'EM ROLLING

✓ Check the wire on every job

America's buses, commercial cars and trucks, are a vital part of our transportation system. They *must* be kept running to maintain our supply lines.

But they *must not* be wasteful. They must run efficiently and economically.

Make it a point to check the wire on every job that comes into the shop. Bad wiring makes units inefficient—can cause up to 20% waste of gasoline.

But wire replacements should be made judiciously. Automotive wire and cable is made from strategic war materials—copper, rubber, lacquer. Only wires that have actually gone bad and can not be repaired or shortened should be replaced.

Another hint. Keep wire clean. Wiping off the accumulated dirt and grease occasionally will do wonders in increasing the life of present wiring.

REMEMBER—

✓ Check the wire on every job

Wirey Joe
WIRE AND CABLE
PAWTUCKET • RHODE ISLAND

WASHINGTON RUNAROUND

(CONTINUED FROM PAGE 130)

vehicle sales. The feeling is that enough used vehicles will be available this year to make even a modified form of rationing unnecessary. . . . Several amendments to ODT 17 are in the works. One of them limits the frequency of deliveries. . . . A move is afoot to have trucks carrying war materials exempted from the 35-mile speed limit. Such trucks would carry a sticker identification. . . . Blacksheep OPA was shorn of another of its prerogatives when WPB took away from the Office of Civilian Supply and gave to ODT the right to act as the Claimant Agency in connection with the Controlled Materials Plan of WPB. ODT will now make the bids for all materials needed to keep trucks rolling and to build new vehicles when needed. . . . The supply of new trailers is so low in the rationing pool that WPB may be asked by ODT to replenish the stock. . . . A count for Mr. Jeffers' use is being made by ODT of the stock of tires in the hands of operators as reported in Certificate of War Necessity applications. . . . There's not a bright cloud on the 1943 horizon so far as rubber is concerned. Conserve until it hurts is still the policy for wise operators to follow.

END

(Please resume your reading on P. 30)

Credit for Conversion

In the December issue of COMMERCIAL CAR JOURNAL an article appeared on pages 42 and 43, entitled "Conserving with Conversions." Readers will recall the 1½-ton, all-weather panel job, shown at Fig. 3, at the bottom of the first page, which had its payload increased to six tons by means of a third axle installation. This job was designed and constructed by the Utility Trailer Manufacturing Co., Los Angeles, Cal., credit for which was inadvertently omitted.

W. H. Knight is Director of Sales

Appointment of William H. Knight as director of sales and market research for the Elastic Stop Nut Corporation, was announced by Thomas H. Corpe, general sales manager of the company. The Elastic Stop Nut Corporation, manufacturers of self-locking nuts, has plants in Union, N. J., and Lincoln, Neb.

K & W METHOD GUARANTEES BLOCK REPAIRS

for the life of the motor



No Heat...

No Welding...

No Interference with motor efficiency

● Now it is no longer necessary to experiment on cracked blocks and heads with heat or welding thereby risking permanent motor injury.

With the new scientific K&W Mechanical Method recommended by Truck Manufacturers, *all types of motors* are quickly made like new, and restored to a long useful life. Hundreds of blocks and heads repaired by this method are still in use after thousands of miles of service.

Remember—you risk nothing! K & W repaired blocks and heads are *guaranteed for the life of the motor*.

See your jobber today. Lay your cracked motor block problem in his lap and end that worry forever. If he isn't yet equipped to do the work himself he can have it done for you in our Bloomington, Indiana, shop.

Try This First!



When cracks are not too large or numerous try K&W Metallic Seal.

Most cracked blocks and heads can be satisfactorily repaired by this simple method. It is easy to use—effects repairs on small cracks in 10 to 15 minutes. Sold through K&W Jobbers on a money back guarantee.

KERKLING & COMPANY, INC.
BLOOMINGTON, INDIANA

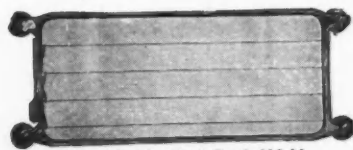
Manufacturers of K & W Metallic Seal and Licensors of K & W Mechanical Method

IN WAR SERVICE . . .

Fulton Electric Sleet-Frost Shields and rubber-bladed Defrosting Fans are on duty today on thousands of trucks and cars, in many lands . . . providing clear-vision driving safety regardless of weather. This, too, is an important war service.



No. 496
Rubber-Bladed
Defrosting &
Ventilating
Fan



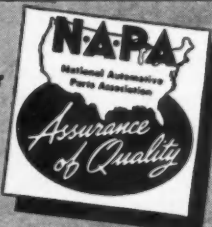
Fulton Electric Sleet-Frost Shield

We made 'em before . . . and we'll make 'em again . . . when Victory is won.

THE FULTON COMPANY

1912 So. 82nd St., Milwaukee, Wis.

See Your
NAPA Jobber
For Prompt
Service on
Automotive
Parts!



A Nation-Wide Organization of
Independent Warehousing Distributors

NATIONAL AUTOMOTIVE PARTS ASSOCIATION
Executive Offices: 705 Fox Building, Detroit

The complete line
that completely satisfies



Gasket craftsmen since 1906
The Fitzgerald Mfg. Company
Torrington, Conn.

GET MORE MILES
per pound of precious
rubber with cooler-running,
longer-wearing
SEIBERLING
Heat-Vented
TRUCK and BUS TIRES

SEIBERLING RUBBER CO., AKRON, OHIO

OPA NEWS

(CONTINUED FROM PAGE 53)

sale of non-essential commodities will not be increased.

OPA War Price and Rationing Boards will be ready to receive applications for rations to provide for these additional miles after January 1.

Salesmen requiring more than the 470 miles a month already available to them may apply after January 1 for additional mileage. They must meet all requirements with regard to car-sharing and lack of alternative means of transportation.

Solid Fuel Tax May Be Passed on to Consumers

Consumers of all grades of coal and other solid fuels will pay the 4 cents per net ton transportation tax imposed by the Revenue act of 1942 effective Dec. 1, the Office of Price Administration has announced. Under the OPA ruling the tax may be passed on to the ultimate consumer, but must be stated separately from the price the consumer pays for the coal and may not be included in the computation of maximum prices, nor be charged except on coal on which the tax has actually been incurred.

Because the cost of transporting coal is a higher proportion of the total cost at destination than for most commodities (sometimes more than 50 per cent), and in view of the seasonal character of the solid fuels industry as well as the limited range of commodities handled, the absorption of the tax by the producer or the solid fuels dealer would result in inequities and hardships, the OPA stated.

Highway Safety Up to Drivers

"No matter how well made the cars, how good the roads, or how ironclad the laws, in the last analysis it is the individual's reaction to the situations he encounters on the highway which assures safety or spells disaster," says Harry R. DeSilva of Yale University in his new book, "Why We Have Automobile Accidents."

Referring to the many proposals made for superhighways as a cure for motor vehicle accidents, Mr. DeSilva says, "The most modern superhighway in the United States is the Pennsylvania Turnpike, a divided four-lane toll highway, 160 mi. long (TURN TO PAGE 154, PLEASE)



ASK YOUR GATKE JOBBER
GATKE CORPORATION 228 N. LaSalle, CHICAGO

WELDED REPAIRS
SAVE
REPLACEMENT



A.C. ARC WELDERS
MARQUETTE MFG. CO., INC.
MINNEAPOLIS, MINN.

Better—but not
more expensive!

SHULER
AXLES

SHULER AXLE CO.
LOUISVILLE, KY.

HEAVY DUTY MOTOR TRUCKS
AND

GASOLINE ELECTRIC
GENERATING SETS

DUPLEX TRUCK COMPANY
Lansing, Michigan

FRINK
SNO-FLOWS

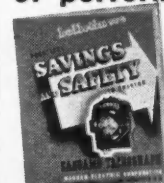
Both "V" TYPE and
ONE WAY BLADE TYPE

hand or power hydraulic control

FOR ALL MOTOR TRUCKS
FROM 1½ to 10 TONS

Write for catalog 38AC and 38BC with discount to truck dealer.
CARL H. FRINK, Mfr., CLAYTON, 1000 1st., N. Y.
DAVENPORT-BESLER CORP., DAVENPORT, IOWA
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TACHOGRAPH
provides daily record
of performance of truck



For complete information, get FREE COPY of descriptive booklet "Savings & Safety." It tells all about the Tachograph manufactured by Sangamo Electric Company, and distributed exclusively by the Wagner Electric Corporation.

AUTOMOTIVE PARTS DIVISION 542-5

Wagner Electric Corporation
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INNER-SEAL

WATERPROOFED
WEATHER STRIPPING



PROTECTION AGAINST RAIN •
SNOW • DRAFTS • DIRT

INNER-SEAL, when applied to doors and windows, keeps cold out, warmth in. A strong, sturdy waterproofed weather stripping that protects interiors of trucks, passenger cars, buses, trailers and cabs. INNER-SEAL Waterproofed Weather Stripping is used and endorsed by leading automotive manufacturers.

Write for Complete Information

BRIDGEPORT FABRICS, INC.
BRIDGEPORT, CONN.

Established 1837

TO KEEP 'EM RUNNING
add this →
to the GASOLINE

"Air-Go" Gas Fluid is made exclusively from high grade petroleum, scientifically combined—NOT a chemical. It is harmless to metals in the engine; rather it is a preserver of metal. Tested by thousands of truck and car operators.

Its use will reduce gasoline and oil consumption; reduce friction in engine and reduce metal wear and metal loss; eliminate and prevent sticky and sluggish valves; reduce and eliminate "ping" so prevalent in motors using today's gasolines. And it increases engine power and prolongs motor life.

"Air-Go" Gas Fluid can be used successfully with any grade of gasoline. When added it produces a finer fuel spray into combustion chambers, approaching a true vapor. This results in a more nearly even and complete fuel combustion so necessary for efficient motor operation.

If your Jobber doesn't have "Air-Go" Gas Fluid, write

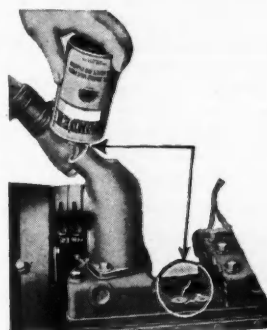
ALLEGANY OIL COMPANY
Chicago, Illinois Oil City, Pennsylvania

AIR-GO GAS FLUID



IMPORTANT ANNOUNCEMENT

The popular and well-known product **WONDERWELD** will have a new name—the same old product with a new handle. A change in name only!



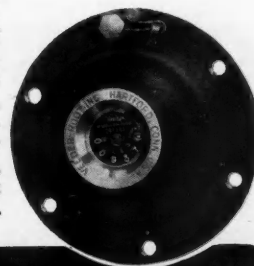
MILLER MFG. COMPANY
1100 N. 32nd Street, Camden, N. J.
Warehouses in Principal Cities

**PROCEED
AT YOUR
OWN RISK**

... without

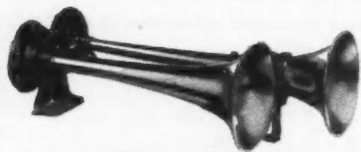
ACCURATE Mileage Records

There's no real conservation of gas, oil, tires or repairs unless it's based on complete, exact mileage records. And such records—accurate to the last tenth of a mile of forward and backward travel—are supplied by dirt-proofed, tamper-sealed Veeder-Root Hub Odometers. These honest, long-lived instruments can be geared at the factory for any size wheels and tires. Write, stating your preference rating, to: Veeder-Root Inc., Hartford, Conn.



Veeder-ROOT HUB ODOMETERS

BUELL AIR HORNS



Keep Them Running L-O-N-G-E-R

● Buell High Pressure Air Horns have a powerful, penetrating tone that gets attention and commands respect. They help to Keep 'Em Rolling longer and smoother by eliminating many time wasting stops and starts. Save tires, brakes, clutches and gears. Cut gas and oil consumption. Available on Priority.

Write for descriptive chart NOW

BUELL MANUFACTURING CO.
2988 COTTAGE GROVE AVE., CHICAGO, ILL., U.S.A.

WAUKESHA Multi-Fuel ENGINES

**DIESEL OIL
GASOLINE
BUTANE**

ALL LIQUID OR GASEOUS FUELS

RESEARCH

IS THE KEY TO FEL-PRO SUCCESS
IN SERVING INDUSTRY, CAR MAKERS
AND AUTOMOTIVE REPLACEMENT FIELD



OPA NEWS

(CONTINUED FROM PAGE 152)

between Harrisburg and Pittsburgh. Far from being foolproof, during the first six months of its use the fatality-per-vehicle-mile rate was double that for the United States as a whole.

"Unquestionably, superhighways facilitate the more rapid flow of traffic, but they are far from being accident-proof. Somehow drivers still continue to have accidents even on highways into which engineers have incorporated the latest and most expensive safety features."

Gas Rationing Nation-Wide

The country's rubber-borne transportation—27,000,000 passenger cars and 5,000,000 trucks and buses—shifted to a full war-time basis at 12:01 a.m. Dec. 1 as nation-wide mileage rationing put into effect the government's program to save rubber for war needs.

END

(Please resume your reading on P. 54)

Three More States Join Elite

Highway users chalked up three new victories against diversion of highway funds in the November elections when Iowa, Oregon and West Virginia voted to amend their state constitutions to require that all special highway taxes be spent for road purposes. Fourteen state constitutions now dedicate highway revenues solely to highway purposes.

Inter-State Seeks Rail Freight Line

Inter-State Motor Freight System, one of the largest motor carriers in the United States, has filed applications with the ICC and the Public Service Commission of Indiana seeking permission to purchase the motor freight division of Indiana Railroad, Harry Bylenga, Inter-State president, announced.

Acquisition of the Indiana Railroad system, Bylenga said, will give Indiana shippers the same state-wide service Inter-State renders in Michigan, its home state. Inter-State, operating in 19 industrial states, now serves directly 330 ICC authorized points in Michigan and 79 points in Indiana. Indiana Railroad serves 50 points in Indiana and one at Louisville, Ky.



FAST BATTERY CHARGING?

Sure. Write today for complete information on our Model 555 Fast Battery Charger. It's Tops In The Field.

BUY WAR BONDS

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**CARTER
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DEPENDABLE SINCE 1877



MAREMONT AUTOMOTIVE PRODUCTS, INC.
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AVIATION & AUTOMOTIVE
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FUEL INJECTION EQUIPMENT

American Bosch Corporation
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OSHKOSH 4-WHEEL DRIVE

For twenty-four years Oshkosh has been building 4-Wheel Drive trucks for all kinds of jobs where the going was tough. Their dependability has long been recognized by Federal, State and County Highway Departments. Recently an increasing number of Oshkosh trucks have gone into War service, in and outside of the United States.

Investigate Oshkosh. Write for descriptive bulletin.

OSHKOSH 4-WHEEL DRIVE SALES AGENCY
OSHKOSH, WISCONSIN



Air Base Construction

"In Service"—At Home and Abroad

Keep 'em Rolling

WITH EFFICIENT
DRIVE ACCESSORIES

To keep present equipment rolling, efficient power transmission is vitally important. Take advantage of Morse Morflex Couplings and Drive Shafts. They reduce friction, wear and require no lubrication—cushion both starting and driving shocks. Write for data.

MORSE CHAIN CO.
Detroit, Mich., Ithaca, N. Y.
Division of
Borg-Warner Corp.

MORFLEX DRIVE SHAFT

MORFLEX COUPLING

MORSE COUPLINGS and
DRIVE SHAFTS

"The Brake People"
BRAKE LININGS • BRAKE SHOES • BRAKE PARTS
MILEY

ANSWER YOUR LABOR AND SERVICE PROBLEMS

A small stock of MILEY Ready Lined Brake Shoes will enable you to "keep them rolling" even when short handed, because you can then re-line brakes by just pulling wheels and slipping in the "ready lined" shoes. Old shoes can then be either re-lined at your convenience or exchanged "over-the-counter" at your local Miley jobbers. Miley jobbers also give exchange service on MILEY Rebuilt Brake Cylinders.

Soon available—our new Brake Cylinder Chart with complete information on brake assemblies. Ask us about this.

SAFETY FIRST
BRAKE SERVICE
WITH
MILEY BRAKE
PRODUCTS

L. J. MILEY CO.

1062 W. ADAMS STREET

CHICAGO, U. S. A.

KEEP 'EM CLEAN

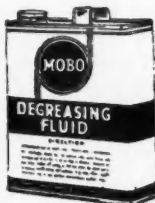
TO KEEP 'EM ROLLING!

Trucks hauling maximum loads 24 hours a day, 7 days a week—need this quick care:



MOBO RADIATOR CLEANER

Dissolves grease, rust, sludge and scale. An easy-to-use, concentrated solvent that cleans thoroughly. Eliminates need for reverse flushing. Can't harm radiator hose and connections.



MOBO DEGREASING FLUID

Reduces shop time because it removes grease, oil, grime instantly, easily. Leaves no greasy film. Does not harm paint or hands. For chassis, motors, floors, grease pits. Also removes dead waxes.

Consult your jobber or write direct to

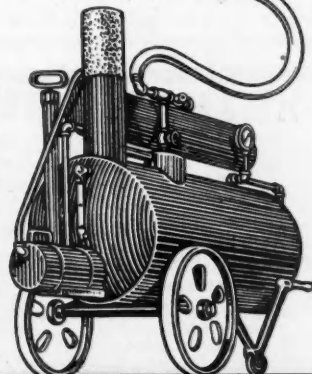
JOHN T. STANLEY CO., INC.
642 WEST 30TH ST. NEW YORK, N. Y.

SPEED UP
MAINTENANCE
and REPAIR
with the
SIEBRING
STEAM
CLEANER

Ordinarily Difficult Cleaning Jobs Made Easy

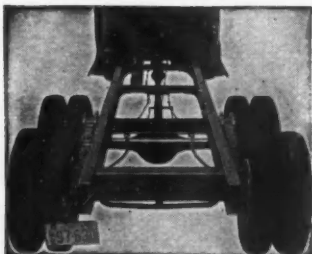
You'll be amazed at the efficient and convenient manner in which the SIEBRING STEAM CLEANER removes the hardest grease, grime, and dirt from trucks, motors, tanks, tractors, airplanes, and all heavy machinery.

This automatic appliance saves many hours time and precious labor—operates satisfactorily on either fuel oil, artificial or natural gas. **TEN DAYS FREE TRIAL OFFER** . . . write for literature and surprisingly low cost.



SIEBRING MANUFACTURING CO.-GEORGE, IOWA

LITTLE GIANT AUTOMOTIVE TRUCK EQUIPMENT TEN WHEELERS for 1½ to 5 Ton Trucks



Greater tonnage . . . more profit. Increase carrying capacity up to 20 tons. Extend frame to any desired length. Load kept in perfect balance . . . no teeter or end-sway. Simple, sturdy, no intricate parts. Timken bearings; steel castings; hydraulic brakes. Easily installed in 3 hours. 3 sizes. **LOW COST.** No priority rating required.

Also makes Little Giant Frame Extensions, Hand Hoists, Wrecking Cranes.

Write for Circulars, Low Prices

LITTLE GIANT PRODUCTS, INC.

1532 No. Adams

Peoria, Illinois

STANDARD & SPECIAL TRUCKS

ANY SIZE OR TYPE



AVAILABLE TRUCK COMPANY

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TOOLS

RIDGE REAMER
PIN HOLE HONE
CYLINDER HONE
ROD ALIGNER

WRITE for prices and full details on the tools you need.

LISLE CORPORATION, Box 1017, Clarinda, Iowa



HICKMAN-BOSTROM

Level-Ride
TRUCK SEATS

- No more cushion repairs
- Cuts driver fatigue
- Saves war materials
- The engineered ride
- Only \$17.85

made exclusively by
BOSTROM MANUFACTURING CO.
MILWAUKEE, WIS.

NEWSCAST

(CONTINUED FROM PAGE 58)

Britain Forms Huge Truck Pool for Over-the-Road Transportation

A new war-time transportation plan has been placed into operation in Great Britain. In effect, this plan is an enlargement of the Hauliers' National Traffic Pool which, as its name implies, was a system of over-the-road operations grouped for efficient handling of long distance hauls.

The important features of the new plan are as follows:

1. Britain is laid out into 12 divisions, coinciding with the existing civilian defense divisions, which in turn are divided into 65 operation areas.

2. Vehicles are grouped into approximately 450 units, each with a definite base of operation. Bases generally are centered around some large fleet with adequate facilities and accommodations. There is a controller for each unit, invariably a member or owner of the fleet. Owners of the controlled vehicles will retain their business identities and will continue to maintain their own vehicles and employ their own drivers.

Area officers and unit controllers are responsible for seeing that no traffic is accepted which should be carried by some other form of transport. Traffic accepted will be allocated to controlled vehicles by the unit controllers, who will be responsible for seeing that no vehicle returns empty to its base if goods are available for it. Short distance traffic carried under the previous road haulage plan will continue to be handled by the area officers.

3. Fuel will be issued by Regional Transport Commissioners.

4. Private carriers' operations will be studied upon an individual basis to determine the economy of their operations with respect to the national plan. Long hauls may be transferred to the controlled vehicles upon the discretion of the Regional Transport Commissioners. Charges will be made upon a cost plus basis. Some private carriers, especially those that are large, efficient and well equipped, may be absorbed into the national pool.

5. Payment to all operators of units is based upon two arrangements. The first concerns the over-the-road operators who are guaranteed an income based upon their net profits for the average of any two ac-

(TURN TO PAGE 158, PLEASE)

BIG ONES from LITTLE ONES

Ford, Chevrolet or
Dodge 1½-ton trucks can
be converted to heavy-
duty Four-Rear Wheel
Drive Trucks.

THORNTON TANDEM CO.
Detroit, Michigan

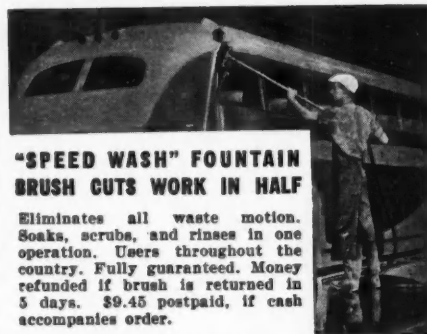
HOLLAND CAN "TAKE IT"

The smartest, most improved unit of its type, Model V-400 Vertical Lift Landing Gear is especially adapted for heavy duty service.

Powerful—rugged—dependable.

Complete truck and trailer equipment.
Catalog on request.

HOLLAND HITCH CO.
HOLLAND, MICHIGAN



"SPEED WASH" FOUNTAIN BRUSH CUTS WORK IN HALF

Eliminates all waste motion. Soaks, scrubs, and rinses in one operation. Users throughout the country. Fully guaranteed. Money refunded if brush is returned in 5 days. \$9.45 postpaid, if cash accompanies order.

MILWAUKEE DUSTLESS BRUSH CO.
325 N. 22nd St. Milwaukee, Wis.

**A 5th
WHEEL
FOR
EVERY
PURPOSE**



Territory Available
AMERICAN STEEL FOUNDRIES
EAST CHICAGO, INDIANA

Oldforge

Fine Tools for Industry
Air and Land Motors, Electrical,
Radio, Refrigeration.

Pedigreed tools for the smart
mechanic

Write for Catalog

QUALITY TOOLS CORP. New Wilmington, Pa.

**CUT WEAR .
BY USING
SINCLAIR
MOTOR OIL**

TIRES MUST LAST LONGER



Are you prepared to keep the necessary records, now that OPA has made it obligatory to submit the tires on your trucks and passenger cars to periodical inspection in order to save rubber?

If not, here is an easy way to do so—

Use an EVERHOT Electric Branding Iron together with the EVERHOT Tire Record System.

You can put your own number on tires or put the Serial Numbers on both sides in large figures that can be plainly seen.

EVERHOT Branding Irons have ten digits (0-9) on the disc making possible any combination of figures. Priced at \$35.00 f.o.b., Maywood, Illinois.

Write for literature and sample forms.

Everhot MFG. CO., Maywood, Ill.

★ ★ ★ ★ ★
Hindview MIRRORS
FOR CARS, BUSES, TRUCKS . . .
And PLANES

★
Write for Literature



**WHITEHEAD
STAMPING CO.**

EST. 1903

1685 W. Lafayette Blvd., Detroit, Mich.

Sterling

SINCE 1907
HAS BEEN THE SYMBOL
OF QUALITY, HEAVY DUTY
MOTOR TRUCKS

Now serving the United Nations
here and in foreign lands.

STERLING MOTORS CORPORATION
MILWAUKEE, WISCONSIN

KING

Our Plant is working to capacity on "KING" Testing Equipment for the Government, and we regret that we cannot give our customary good service. However, we can ship most orders with the required priority rating.

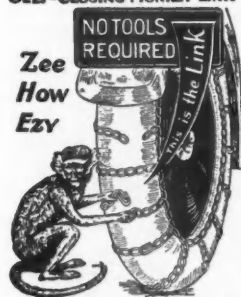
THE ELECTRIC HEAT CONTROL CO.
9121 INMAN AVENUE • CLEVELAND, OHIO



PERMANENT ANTI-FREEZE

FREEDOM CHEMICAL COMPANY
Cleveland, Ohio

SELF-CLOSING MONKEY LINK



Trade Mark Reg. U. S. Pat. Office
Pat. No. 1,438,560

FLOWER CITY SPECIALTY CO., Rochester, N. Y.
Or at All Reputable JOBBERS

**When The First
Snow Flies**

The hazards of winter operation of your fleet will soon be upon you. This year, as never before, you will try to safeguard your irreplaceable trucks—and, if you are fore-handed and economically minded, will be considering your tire chains and your stock of

MONKEY LINKS

Don't risk unnecessary accidents. Keep Monkey Links in your shop and on your trucks this winter. No tools are required; your driver can fix a break in jig time.

We'll send you samples immediately if you'll write telling us the number of trucks you have and the size chains you use.

**EXCLUSIVE WELDUM PROCESS
SOLVES LEAKAGE PROBLEMS**

Inherent heat of combustion and alternate suction and compression action repairs internal leaks due to cracked cylinder blocks, heads, valve ports. External block and head leaks repaired permanently in most cases.

When liquid runs from the tail pipe we guarantee to repair the leak with LUSCO CYLINDER-BOILER "WELD"ium.



Radiator leak repairs carry an unconditional 90-day guarantee when repaired with LUSCO WELD Cubes! (Containing Weldium.)

Has no stop leak objections.
Lusco Cleans the System.

C. F. LUSK CO.
6531 Euclid Ave., Cleveland, Ohio



"DANDUX"
APPROVED PRODUCTS
 . . . have greater value,
 economy and precision craft-
 manship! Send for free folder,
 today.

C. R. DANIELS, INC.
 Manufacturers of Everything of Canvas
 44 WEST ST. NEW YORK, N. Y.

Newark • Boston • Buffalo • Chicago • Cleve-
 land • Detroit • Milwaukee • Philadelphia •
 Pittsburgh • Los Angeles • Dallas, Texas • Cin-
 cinnati • Alberton, Md.

THERE IS A GUARANTEED

Pedrick

ENGINEERED SET
 of PISTON RINGS
 FOR
 EVERY COMMERCIAL VEHICLE

LIPE
HEAVY-DUTY Clutches
Insure Maximum Clutch Life

- ★ 20 ball-hinged levers for uniform pressure, smooth engagements, easy disengagements.
- ★ Parallel disc contact. ★ No localized burning. ★ Long facing life.
- ★ Warp-resisting pressure plate.
- ★ Rigid cast iron construction. ★ Forced internal air cooling.

Write for Full Information
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 Now Taking Our
 Full Capacity

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OIL-SAVR
PISTON RINGS

*The FREE RUNNING
 Rings with the
 SAFETY CENTER UNITS*

**POWER QUICK . . . and
 IT LASTS!**

See your Jobber or write
WAUSAU MOTOR PARTS COMPANY
 2400 HARRISON BLVD. WAUSAU, WIS.

(CONTINUED FROM PAGE 156)

counting years within the period commencing Jan. 1, 1935, and Dec. 31, 1938. Appropriate adjustments will be made for any variation in the capital value of the assets employed in the business.

Private carriers have a fixed schedule of rates which will cover costs of operation, including depreciation as well as a consideration for the average net pre-war earning capacity of the vehicles concerned.

Lord Leathers, Minister of War Transport states that the entire plan is subject to any reasonable changes, if any unfairness should be discovered. Moreover, the plan is intended to be in operation only for the duration and in no way will affect the post-war position of the individual licensees.



Leon A. Potts has been named by the K-D Lamp Company to supervise sales of their products in the state of New York, excluding the metropolitan area. Mr. Potts has been connected with the automotive industry for a number of years as a manufacturers' agent.

Harold C. Davis, pioneer truck operator and highway transportation authority sent by President Roosevelt to help increase Burma Road traffic in 1941, has been named Director of Operations, Northern Division, for Associated Transport, Inc., whose 3,500 trucks ply the highways from New England to the Gulf of Mexico.



Paul Evans Joins D. C. Hall

Paul W. Evans is now superintendent of equipment of D. C. Hall Motor Transportation Co., Fort Worth, Tex. Mr. Evans formerly was Dallas branch manager for White and for Fruehauf and wholesale manager for Mack. Ill health caused his retirement a year and a half ago.

Clouser Appointed Sales Manager

The Wilkenning Manufacturing Co., Philadelphia, announced the appointment of Walter A. Clouser as manager of the Replacement Sales Division.

(TURN TO PAGE 160, PLEASE)

BALDOR
**ELECTRICAL SPECIALISTS
 FOR 22 YEARS**

Manufacturers of
 Electric Motors
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 Battery Chargers
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- Uninterrupted Schedules
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Keep your Trucks and Cars Moving, aid the Nation's Transportation, Conserve Steel, by keeping Tire Chains in repair. Write to S. G. Taylor Chain Co., makers of

• TAYLOR-MADE TIRE CHAINS •

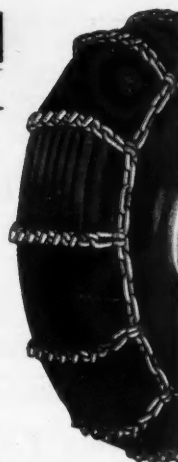
for this *new manual today*—it shows how to tect your chains and keep them service-fit. New bulletin tells how to get more service-miles from present equipment—tells how to make repairs.

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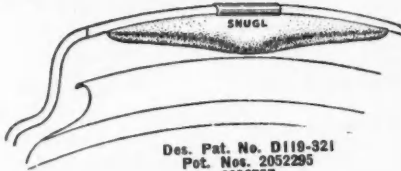
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when all wheels are balanced with

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**Fade-Away
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WEIGHTS**



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Free
CATALOG



MICRO-LINOR

Patented "Tracer-Wheel" Principle

An OUNCE of "Balancing" Saves POUNDS of Rubber !

Help Save 108,000 Tons of Rubber!

It has been estimated that if all cars and trucks had their wheels balanced, it would save 108,000 tons of rubber a year besides reducing ruinous wear on mechanical parts caused by excessive vibration, which greatly affects the factor of safety. Remedy these conditions by balancing your wheels with **L & H** Balancing Weights. They fit any and all styles of both rims and rings.



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BOND EMBLEMS
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... on trucks, painted walls, store interiors. 2 sizes. Easy to apply. Washable. Durable. Red, white and blue colors.

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ELECTRIC DRILLS**

Streamlined with a purpose. They're redesigned—shorter, more compact—for greater efficiency, better balance, easier handling and greater convenience in close quarters. All the tried and proven **SIoux** developments that have made them outstanding for their endurance have been retained. **SIoux** Heavy Duty Drills include sizes and capacities to meet all needs. For the most efficient and economical method of handling any drill job, you need **SIoux** Drills.



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XACTO Printing Pump
To Check Fuel Deliveries
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Fuel Consumption at the Motor
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they are needed; on the
road. That's where Gen-
uine Timken Bearings
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It Costs No More for Trucks Specially
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OIL AND MOTOR CLEANER

Cleans Oil Chemically,

Physically, Visibly

FRAM CORPORATION
Providence, R. I.

(CONTINUED FROM PAGE 158)

Oil Delivery Suggestions

As a basis for cooperation between con-
sumers and fuel oil suppliers and to pro-
mote vehicle conservation, ODT and
OPA have suggested observance of the
following rules:

1. Special deliveries must be eliminated.
2. Home owners should give suppliers
at least two full days' advance notice on all
orders for fuel oil.
3. Orders should not be placed till the
householder's storage tank is low enough
to permit the delivery of a load equal to
at least 75 per cent of the capacity of the
consumer's tank. The directors of the two
agencies urged consumers to cooperate with
the rationing programs by refraining when-
ever possible from placing small orders.
4. Call-backs to cover blank stops must
be eliminated. Consumers, therefore,
should make certain that some one will be
home to accept a delivery when it is
scheduled to be made.

Trucking Commission Named to Handle Labor Disputes

The National War Labor Board has set
up a tripartite Trucking Commission with
power to decide all labor disputes and to
rule on wage and salary adjustments in the
trucking industry.

Professor Howard Meyerhoff, of Smith
College, was appointed chairman of the
Trucking Commission. The industry mem-
ber is Landis O'Brien, executive vice-presi-
dent of the CCC Highway Express Co.,
Cleveland, Ohio, while Frank Tobin, re-
search director of the International
Brotherhood of Teamsters, AFL, was ap-
pointed as labor member. They are to be
paid officials of the War Labor Board.

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Spray-Painting Equipment—Spray
Booths—Canopy Exhaust Systems
—Exhaust Fans—Air Compressors
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Oil Guns.

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BEST . . . KEEP IN BUSI-
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THE Decalomania that is . . .

FIRST in { **APPEARANCE
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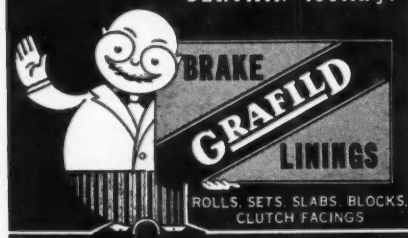
PERMALUX "KOLORFILM" decals
offer greater durability and economy in
application and maintenance. Completely
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they last longer . . . look better!

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REPLACEMENT CARTRIDGES.

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FREE STICKY VALVES

Prolong Engine Life
with

**SHALER
RISLONE**

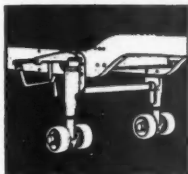
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of **LANDING
GEARS . . .**
HORIZONTAL,
VERTICAL and
FOLDING TYPES.

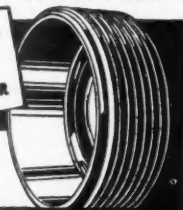
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PROPS" and FIFTH WHEELS.

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The Ideal Metal for BRAKE DRUMS

RESISTS HEAT, SCORING
GIVES SMOOTHER
BRAKING ACTION
REDUCES LINING-WEAR



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with General Foundry &
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- COLOR FAST
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plus the durability of Plastic. Try
Bowman's specially constructed plastic
lenses under any operating condition.

FREE Samples and complete information to Fleet
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quest.

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A new war tire made from reclaimed rubber
will be sold by Standard Oil Co. of Indiana,
the company announced recently. The new tire
will be available at Standard dealer service
stations as soon as government authorization
is received. The only difference in the appear-
ance of the reclaimed tire and the former tires
will be a stencil reading "war tire," as shown
above, next to the serial number. The cord
used previously will be continued to insure
against failure from carcass bruises and to
allow a higher percentage of recapping. At
speeds less than 35 m.p.h., the new tire will
give reasonably satisfactory mileage, Standard
states, warning that underinflation of a "re-
claim" tire must be avoided. If an automobile
is not stopped within a few feet after a war
tire goes flat, it may be ruined beyond repair.

Report Shows Tire Life Increasing

Freightways, Inc., has issued a report on
the results of its members' Tire Conser-
vation Program. This report shows that,
during the first six months of 1942, 1,039
10.00 x 22 tires came out of service after
averaging 102,040 miles per tire. This figure
does not include the miles that these tires
were operated in terminal areas.

Out of the total of 1,039 tires, 960 of
them were recapped; 2,146 recaps were ap-
plied to these 960 tires, an average of 2.2
recap per tire. The 79 tires that were not
recapped averaged 50,652 miles per tire.

This report also shows that the average
miles received from tires taken out of ser-
vice in the first six months of 1941 was
90,124 miles, as compared with 102,040
miles received from the tires taken out of
service in 1942. Thus, the average number
of miles obtained from tires in 1942 was
increased 13.3 per cent over the remark-
able record made in 1941.



G. E. Read has been
appointed regional
manager of the Phila-
delphia territory of
the Studebaker Corp.
He has been associ-
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pany for more than 21
years. Mr. Read suc-
ceeds W. K. Erdman,
who resigned to ac-
cept a major's com-
mission in the army

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plastic fittings with copper, steel or
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for restoring pistons
to original factory fit.

Every pulled piston should
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The world's largest
operators of commercial
vehicles use Jones Port-
able Tachometers to
check engine speeds for
tune-ups, and setting
governors, etc. Here are
a few: Standard Oil Co.,
of La., N. J., N. Y., Shell
Petroleum Co., Atlantic
Refining Company, Tide-
water Oil Company,
Keeshin Motor Express.

Mack Trucks, Brockway, U. S. Navy.

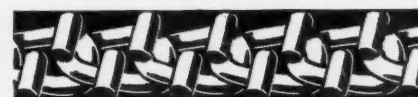
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omy, use the double-bar-reinforced
McKay Multi-Grip Truck Chain!

THE MCKAY CO., PITTSBURGH, PA., York, Pa



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